An examination of Australia’s federated network universities from an interorganisational relations perspective

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This thesis is dedicated to

My Dear Wife

*Rada*

Darling, I could not have done this without you.
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AN EXAMINATION OF AUSTRALIA'S FEDERATED NETWORK UNIVERSITIES FROM AN INTERORGANISATIONAL RELATIONS PERSPECTIVE

ABSTRACT

This research studies the interorganisational relationships within Australia's three federated network universities: the University of Western Sydney, Charles Sturt University, and the University of New England; in the period from 1988 to 1993. It examines the history, operation, and performance of the network universities from an Interorganisational Relations perspective drawn from the Management discipline. Interorganisational relations is primarily concerned with how organisations interact with their external environment. It considers the reasons organisations enter into relationships with other organisations, the motivations which determine the permanence of these relations, and the nature of these relations. Interorganisational relations is becoming increasingly important to organisations, both in the public and private sector, as they become aware that they need other organisations in order to survive and succeed. The federated network structure is an organisational structure which allows organisations to form interorganisational relationships under the guise of being a single organisation but allows them to retain some control and management over their own interorganisational activities. The literature's empirical investigation of the interorganisational relationships within federated network structures is still at an embryonic stage. This research proposes that the interorganisational relations within a federated network structure are critical to the performance of the network. It also proposes that the role of the central coordinating agency will contribute to the performance of the federated network structure. This research's fundamental theoretical framework is the federated network structure as a political economy developed by Benson (1975). This research develops the new concept that the political economy has degrees of strength. A strong political economy is where the interorganisational relationship allows member organisations to pursue funds and authority vigorously. A moderate political economy allows members the capacity to pursue funds and authority but this is moderated by a degree of central control. A weak political economy denies members the opportunity to pursue funds and authority in the competitive and combative sense of the political economy. This research is designed to examine these issues. It aims to contribute to the understanding of relationships within network structures. It finds that the federated network structure is largely defined and explained by the members' pursuit of funds and authority within the network's political economy.
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CHAPTER ONE : INTRODUCTION

Overview

This research studies the interorganisational relationships within Australia's three federated network universities: the University of Western Sydney, Charles Sturt University, and the University of New England; in the period from 1988 to 1993. It examines the history, operation, and performance of the network universities from an Interorganisational Relations perspective drawn from the Management discipline.

1.1 Research Problem

Interorganisational relations is primarily concerned with how organisations interact with their external environment. It considers the reasons organisations enter into relationships with other organisations, the motivations which determine the permanence of these relations, and the nature of these relations. Interorganisational relations is becoming increasingly important to organisations, both in the public and private sector, as they become aware that they need other organisations in order to survive and succeed.

However, relationships between organisations involve many complexities. These include the history of the organisations involved; their motivation for entering the relationship; the nature of the formal or informal agreement which binds them together; the benefits they seek from the relationship and the costs they are willing to pay to gain these benefits; their perception of their role within the relationship and the role of the other organisations; and the use of political processes such as power, coercion, and conflict to gain the resources they seek from the relationship. Organisations seek relationships with other organisations because a) they perceive the relationship will produce benefits which outweigh the costs involved and b) they believe they can achieve more from the relationship than if they were not involved in the relationship. There are different degrees of strength of relationships between organisations and different structures which bind them together. At some stage in the relationship, the organisations, and an external authority if such an authority mandated their relationship, will want to review the performance of their interorganisational relationship.

The federated network structure is an organisational structure which allows organisations to form interorganisational relationships under the guise of being a single organisation but allows them to retain some control and management over their own interorganisational activities. Networks are one of four forms of basic interorganisational interaction; the others being dyadic linkages, action sets and organisation sets. Most definitions of networks focus on interaction patterns. However, this research proposes that there is a need to provide a more rigorous definition of networks which takes into
account the complexities and underlying tensions of relationships within a network.

This research proposes that the interorganisational relations within a federated network structure are critical to the performance of the network. The relationships between the network's central coordinating agency and the network members and between the members themselves are important in determining whether the network achieves synergy and provides more benefits for the members than they could have attained as separate organisations. This research also proposes that the role of the central coordinating agency will contribute to the performance of the federated network structure.

This research's fundamental theoretical framework is the federated network structure as a political economy developed by Benson (1975). Benson suggests that the interorganisational network may be analysed in terms of two related, but partially autonomous, sets of concepts. Analysis may be focused on interaction patterns concerned with the actual performance of core functions or purposes of the organisation. Benson argues that analysis of relations of this kind has been the predominant concern of interorganisational analysts. The second, deeper mode of analysis is focussed on the processes of resource acquisition, that is, the activities undertaken by organisation participants in pursuit of an adequate supply of organisational resources. Benson suggests that "organisation decision makers are oriented to the acquisition and defence of a secure and adequate supply of these resources. Decision makers also seek authority for the legitimation of activities, the right and responsibility to carry out programs of a certain kind, dealing with a broad problem area or focus." He concludes that a fundamental aspect of the political economy of interorganisational relationships is the need for funds and the authority to use those funds autonomously.

This research develops the new concept that the political economy has degrees of strength. A strong political economy is where the interorganisational relationship allows member organisations to pursue funds and authority vigorously. A moderate political economy allows members the capacity to pursue funds and authority but this is moderated by a degree of central control. A weak political economy denies members the opportunity to pursue funds and authority in the competitive and combatative sense of the political economy.

This research is designed to examine these issues. It analyses the nature of interorganisational relationships within Australia's three federated network universities. It aims to contribute to the understanding of relationships within network structures by exploring each network university's environmental context, historical development, operation, specific structures, and performance. It finds that the federated network structure is largely defined and explained by the members' pursuit of funds and authority within the network's political economy.

Australia has three federated network universities: the University of Western Sydney (UWS), Charles Sturt University (CS), and the University of New England (UNE). UWS was made up of three former CAEs: the Hawkesbury Agricultural College, the Macarthur Institute of Higher Education, and the Nepean College of Advanced Education. CS was made up of two former CAEs: the Mitchell College of
Advanced Education and the Riverina-Murray Institute of Higher Education. UNE was initially made up of one University, the University of New England, and two CAEs, the Armidale College of Advanced Education and the Northern Rivers College of Advanced Education. In January 1990, the Orange Agricultural College became a college of the University. The three network universities were created by essentially similar legislation which stated that each university was to be governed by one Board of Governors, one Vice-Chancellor and a Chief Executive Officer (or Principal) at each network member. However, each network university differed in its interpretation of the legislation and their perception of a federated network university.

The general research problem is to examine whether the interorganisational relationships within federated network structures; more specifically between the member organisations and between the members and the central coordinating agency, may be explained by the pursuit of funds (money) and authority (autonomy).

The specific research questions which are the focus of this research are:

The first sub problem: is to determine the nature of the federated network structures at each of Australia’s three network universities and how they operate.

The second sub problem: is to determine the nature of the interorganisational relationships within the federated network structures at each of Australia’s three network universities; more specifically between the members and the central coordinating agency and between the members themselves.

The third sub problem: is to review the performance of the federated network structures at each of Australia’s three network universities in terms of their efficiency, effectiveness and from an interorganisational relations perspective.

The fourth sub problem: is to prescribe a future direction for improving interorganisational relationships within the federated network structures at each of Australia’s three network universities.

These research questions will examine issues of coercion, force, bargaining, conflict of interests, and subversion of goals as the dynamic forces which make the federated network a political economy. The research further proposes that members' concern with the distribution of funds and power will significantly influence the nature of the federated network structure and ultimately the efficiency and effectiveness of the structure.

In summary, this research is justified on the grounds of the increasing importance of Interorganisational Relations for the survival and success of organisations, and on the relative neglect of research on relationships within federated network structures in the Interorganisational Relations literature. The research is also justified due to its review of the performance of the federated network universities and the contribution to Government and the institutions themselves.
1.2 Methodological Weaknesses In Research On Federated Network Structures

The literature has not fully addressed the need to explore inter organisational relationships within federated network structures. The literature has largely restricted its analysis of networks to interaction processes and ways to improve coordination. The fundamental methodological weakness of the literature's research on federated network structures is the failure to analyse and describe the political processes used in procuring resources within the network. The literature has not fully explored network members' use of power, coercion, and conflict to gain funds and authority within the federated network's political economy.

There is evidence throughout the literature that an understanding of networks is still at its embryonic stage. Leading theorists such as Aldrich, Whetten, Tichy, Tushman, and Provan have stated the inadequacies of the literature's empirical investigation of inter organisational networks. Tichy et al (1981) suggest that a network approach to organisations is not new. Its conceptual origins can be traced to three broad schools of thought: sociology, anthropology, and role theory. However, they support the notion that a framework which conceptualises the complexity of inter organisational relationships within a network is very difficult to grasp. Aldrich and Whetten (1981) argued that most studies of organisation-environment interaction focus on isolated organisations relating to their environments. Network concepts, if used at all, are treated as metaphors rather than analytical tools. They suggest that the major problem confronting persons seeking to design or study networks of inter organisational relations is how to cope with the seemingly unmanageable complexity of social systems. Provan (1983) agrees that while there have been several reasonably comprehensive discussions of federations in the literature, the study of federations as a type of inter organisational linkage network has not been the focus of much research.

This research proposes that the literature requires a more comprehensive framework for analysing inter organisational relationships within federated network structures. It is quite difficult to present data for network analysis. The most common method is to use graphs or matrices which plot interaction patterns, communication flows and so on. However, this approach is somewhat superficial and does not explain the complex underlying tensions which exist within a network's inter organisational relationships. Aldrich and Whetten (1981) express their frustration with the arbitrariness of trying to quantify inter organisational relations. There are also various definitions of federations. There are linkage networks, mandated federations, voluntary federations, and partially mandated federations. Stern (1981) argues that the most sensible approach to the study of networks is to explore the underlying forces and tensions within a federated network by focusing on its environmental context, historical development, interaction processes and specific structures. Organisations may be brought together as a federated network structure, either voluntarily or by mandate, in order to gain benefits or resources which will allow them to better achieve their goals. How they set about to gain these benefits or resources once involved in the network is the most complex component of network analysis.
Provan provided a telling insight when he explained the importance of control as the principal way of distinguishing between a federated network and other types of linkage arrangements.

These issues have been combined to provide the following framework for the analysis of the interorganisational relationships within Australia's federated network universities:

1  Provide an historical context.
   a  Analyse the environmental uncertainty faced by the network member organisations prior to joining the network.
   b  Describe the resource procurement the network member organisations sought from forming interorganisational relationships with the other members.
   c  Analyse the network configuration.
   d  Analyse the nature of the mandate.
   e  Provide an introductory overview of the federated network structure in terms of how the network organisations interpreted the network structure.

2  Analyse the network in operation.
   a  Analyse the governance structures.
   b  Describe the role of the central coordinating agency.
   c  Describe the role of the network members.
   d  Analyse the interorganisational relationships between network members and between the members and the central coordinating agency.
   e  Describe the specific structural aspects of the network structure.

3  Review the performance of the network structure.
   a  The effectiveness of the network structure.
   b  The efficiency of the network structure.
The performance from an interorganisational relations perspective.

This research has developed this methodological framework in order to gain a comprehensive understanding of the interorganisational relationships within federated network structures. The main findings of this analysis are presented in chapters five, six and seven. Chapter nine - conclusions and recommendations - presents the findings of the research's fourth sub-problem and considers the following:

4 Future direction for improved interorganisational relationships.

a Structural issues.

b Managing the political economy.

c The literature's solutions.

d The adhocracy.

In addition, this research considers a number of other areas where the literature requires further research. These are further methodological weaknesses within the literature which this research has aimed to examine.

Social exchange theorists have generally focussed on the concept of exchange in a very broad conceptual sense and have ignored the complexity of the interaction once organisations decide to exchange resources. Cook (1977) and Aldrich and Whetten (1981) have explored the forces of power in exchange networks, however, there has been a lack of empirical research into issues of force and coercion in interorganisational relationships. Social exchange theorists have explored organisations' motives for interaction as the procurement of scarce resources but have generally ignored the complexities of procuring these resources once the decision to interact has been made.

A further criticism of the exchange perspective of interorganisational relations is that it may be perceived as seeking to reduce the anxiety of senior executives. Reduced environmental uncertainty is likely to be only one of many benefits or rewards perceived by the organisation when deciding to enter into an interorganisational relationship. A more helpful approach might be to look at the costs and benefits of exchange from the organisation's point of view and assess whether interorganisational relations are advantageous for the focal organisation.

A weakness of the resource-dependence perception of interorganisational relations is that it places considerable power with the focal organisation. Organisations and their decision makers may not be in
a position to influence resource procurement as the literature suggests. There are many factors which constrain strategic choice and many executives simply cannot choose to enter or withdraw from interorganisational relationships because it suits their resource procurement objectives. The mandated relationship is a good example whereby participants must cooperate with their mandated partners and their strategic options are thus very limited. Another criticism is the too clear distinction between voluntary and mandated relationships. It is implied that organisations in voluntary relationships have substantial power to manipulate their position within an interorganisational relationship while those in mandated relationships have little power. However, this precludes the possibility of partially mandated relationships which transcend the two extremes. The literature fails to adequately address the possibility of partially mandated relationships.

It is clear that there needs to be further empirical research into the causes and implications of partially mandated relations. Little work has been done on the behaviour of organisations who enter into a relationship voluntarily and then feel trapped by its formal agreement. Similarly, research needs to be done on organisations who feel they enter into a mandated relation voluntarily or who begin a mandated relation with a formal agreement which then becomes the basis of a mandate and the organisation comes to feel restricted by the mandate.

This research aims to examine these methodological weaknesses within the literature by adopting a comprehensive theoretical framework for the analysis of interorganisational relationships within federated network structures.

1.3 Contributions Of The Research

The potential applications of the research findings provide the final justification for this research. It will make both theoretical and practical contributions to the design and management of interorganisational relationships within federated network structures. From the theoretical perspective, the research further develops the understanding of interorganisational relationships within federated network structures, particularly the use of political processes by network members to gain benefits from the relationships. It also explores a number of associated areas within the literature which required further research. Its findings can facilitate further research within the field of Interorganisational Relations.

In addition to the contribution toward the study of federated network structures, this research also has practical benefits for both Government and the institutions themselves.

In August 1988, Australia's then Federal Minister for Employment, Education and Training, the Hon John Dawkins, introduced a series of sweeping reforms which transformed the country's higher
education system. Mr Dawkins released a White Paper which outlined the Federal Government's policy on higher education. It set out a complete restructuring of the higher education system and replaced the binary system of universities and colleges of advanced education with the Unified National System (UNS) comprising universities only.

The rationale underlying the White Paper was based on both economic and educational objectives and suggested that a smaller number of larger institutions would result in a more efficient and effective higher education system. The Commonwealth Government wanted improved performance from its higher education system because Australia's worsening economic recession required its universities to play more of a role in the economic recovery and there were increasing pressures on Government funding which meant higher education was forced to operate more efficiently. The Federal Government hoped the Unified National System would a) make higher education institution's more efficient and effective and b) assist the nation's process off economic adjustment. The first objective would be achieved by new organisational structures and improved management. The new structures were based on the notion that larger institutions would generate economies of scale and reductions in unit costs. Improved institutional management required Vice-Chancellors and Chief Executive Officers to introduce management processes aimed at achieving the Government's economic objectives. The second objective was linked to the belief that there is a direct relationship between higher education and economic recovery. The implication was that the economic prosperity of countries such as the United States and Japan was a direct result of their high participation rates in higher education; and more specifically, their number of graduates in engineering and the technologies. This objective would be achieved by concentrating resources on vocational higher education, focusing on universities' internal processes, and improvements in the quality of the higher education system's output: graduates.

There has not been a comprehensive review of the performance of the Unified National System and whether its objectives have been met. Such a review is beyond the scope of this research. However, this research does aim to contribute to a review of the UNS by exploring the performance of three of its universities in the period 1988 to 1993. While chapter seven focuses explicitly on the performance of the network universities, the research reviews their performance throughout by analysing and describing the nature of their interorganisational relationships.

This research is particularly relevant for Government and the institutions themselves because the federated network structure captures the essence of the White Paper reforms. The structure combined small institutions as one organisation in order to achieve the UNS's objectives. It illustrated the notion of having a smaller number of larger organisations and embodied Government's hopes for making higher education institutions more effective and efficient. It was also the only entirely new organisational structure created as a result of the White Paper. The federated network structure had never been attempted in Australian higher education and it was a different structure from the traditional university structure. Neither Government nor the institutions fully understood how the network structure would operate.
This research is also interesting because one of the network universities, the University of New England, has de-amalgamated. Charles Sturt University has integrated its network and is performing well while the University of Western Sydney is held together by a tenuous balance of forces. Each of the network universities interpreted the legislation differently and adopted a different interpretation of the federated network structure. The failure of the University of New England and the performance of the other two universities leads to questions of whether the federated network structure is a good organisational structure and, more specifically, whether it is the most appropriate structure for achieving the network member institutions' objectives.

These issues suggest that this research has practical implications beyond the interests of Government and the three organisations which are the subject of the study. Interorganisational relations is an exciting new field which can enhance organisations' capacity to survive and succeed in today's turbulent environment. The research findings have a broad application in showing the importance of developing effective interorganisational relationships and in learning lessons from the experience of the three universities. It also raises issues of organisational design and asks whether federated network structures are appropriate for Australian organisations and also what type of management structures can facilitate interorganisational relationships.

1.4 Definition Of Key Terms

For the purposes of this research, there are a number of key definitions of terms.

One key term is interorganisational relationships. Raelin provides one of the more useful definitions:

"The exchange basis of Interorganisational Relationships concerns a voluntary interaction between organisations which are interested in realising individual and mutual goals...the power-dependency approach (views the situation where) not all of the potential participant organisations are interested in interaction...(and thirdly) organisations are assembled into a network by a mandate in order to realise individual and mutual goals." (Raelin, 1980)

Raelin's definition shows that interorganisational relationships are not always voluntary and that there are degrees of commitment to the relationship from voluntary through to legal mandate. The three network universities which are the subject of this research each comprise previously separate institutions brought together as a single institution. Their single organisational entity is mandated by law.

Another key term is the federated network structure. It is defined by the University of Western Sydney
"The federated network university involves relatively autonomous institutions coming together to act jointly where it is either legally necessary to do so or where it is deemed to be in the best interests of achieving the University's mission to do so." (1991)

There are numerous definitions of network structures within the literature. Most focus on interaction processes, however, this research rejects this approach as being superficial and failing to take into account the underlying complexities inherent in the network structure. The following definition is proposed as a basis for the research which follows. It draws on theoretical frameworks drawn from Raelin (1980), Provan (1983), Stern (1981) and Benson (1975).

A federated network structure refers to a group of organisations that have formed interorganisational relationships, and can be recognised as a bounded interorganisational system, in order to achieve both mutual and interdependent goals which they could not have achieved as independent organisations. The principle distinguishing feature of federated network structures from other network structures is the network members' control and management over their own interorganisational activities. The degree of member control will play a crucial role in defining the nature of the federated network and is largely determined by the network's mandate, or if the mandate is unclear, the members' interpretation of the mandate. A dominant feature of the underlying complexities of interorganisational relationships within federated network structures is the political economy; more specifically, the pursuit of funds and authority. Interorganisational activity within a federated network structure is a function of the historical development of relationships as well as current structural characteristics, and, the strength of the federated network structure depends on the processes that link network structure to the interests of the organisations in the network. The performance of the whole of a federated network structure should exceed the individual performance of its network members or the network should be disbanded.

1.5 Methodology

This section provides a brief overview of the methodology used in the research. A more detailed description is provided in chapter three.

1.5.1 Research Design

This research is a comparative case study. It compares and contrasts research findings on three
organisations: the University of Western Sydney, Charles Sturt University and the University of New England.

This research uses qualitative research methods. The research's main findings are presented in chapters five, six and seven. These chapters present a qualitative analysis of the research data. They consider the historical context of the three network universities' interorganisational relationships, the network structure in operation, and a review of the performance of the network structure. The research also involved a quantitative analysis of a survey of the University of Western Sydney's sixty-three most senior staff. The survey was designed to supplement the main research findings. However, it was decided that the main focus of this research is the qualitative data and, therefore, the quantitative analysis was excluded. Chapter four provides an additional qualitative analysis. This chapter analyses the key issues which emerged in Australia's higher education sector in the period from 1988 to 1993 to provide an environmental context for the research.

Spector (1981) describes a scientific investigation or study as being undertaken to:
"...answer some specific question of hypotheses concerning the behaviour of animals, humans, or social systems".

This research has a number of research questions and propositions designed to explore the interorganisational relationships within Australia's federated network structures. Spector states that the research must adopt a scientific method which is designed to minimise the biases that affect subjective opinion. This research uses a case study approach for its qualitative analysis in order to fulfil the criteria of scientific method.

Yin (1985) suggests there are three conditions which influence the selection of research design:

a) the type of research question posed,

b) the extent of control an investigator has over actual behavioural events,

c) the degree of focus on contemporary as opposed to historical events.

He suggests there are five major research strategies in social science research: experiments, surveys, archival analysis, histories, and case studies. The decision to use a case study approach for the research's qualitative analysis is justified using Yin's framework for distinguishing between the five research strategies.

1.5.1.1 Type of Research Question

This research is concerned with "how" and "why" questions. It aims to analyse and describe how the interorganisational relationships developed within the network universities and why they developed
the way they did. These questions involve operational links needing to be traced over time rather than frequencies or incidence. These type of research questions favours the use of case study research.

1.5.1.2 Extent of Control Over Behavioural Events

This research has no control over relevant behaviours. It could not influence the operation of the network universities in any way. The case study does not require control over behavioural events and therefore is appropriate for this research. The case study uses primary and secondary documents, direct observation and systematic interviewing. Yin suggests that the case study's unique strength is its ability to deal with a full variety of evidence: documents, artefacts, interviews, and observations. This research used a variety of research evidence in its qualitative analysis.

1.5.1.3 Focus On Contemporary Events

This research focuses upon a contemporary event. It analyses and describes the performance of the federated network universities in the period 1988 to 1993. The case study requires a focus upon a contemporary event and therefore is appropriate for this research.

1.5.1.4 Conclusion

Yin concludes that the case study has a distinct advantage when:

"A 'how' or 'why' question is being asked about a contemporary set of events, over which the investigator has little or no control".

This research's qualitative analysis meets these criteria and therefore the case study approach is used.

1.5.2 Data Analysis Techniques

This research involves one type of data analysis: qualitative analysis.
The qualitative analysis is based upon the case study research design. Yin suggests "case study data analysis consists of examining, categorising, tabulating, or otherwise recombining evidence, to address the initial propositions of a study". Yin suggests that analysing case study evidence is especially difficult because the strategies and techniques have not been well defined in the past. He suggests that the general analytical strategy should be to determine what to analyse and why. Furthermore, there are three dominant analytical techniques which can be used: pattern-matching, explanation-building, and time-series analysis.

This research combined Yin's two general strategies for analysing its case study data: a) relying upon theoretical propositions and b) developing a case study description. Chapters five, six and seven were driven by theoretical constructs found within the literature. Each section was introduced with a brief overview of the relevant literature. The research data was then analysed and contrasted using theoretical constructs drawn from the literature. Conclusions about the literature and the data were then drawn to present research findings. Chapters five, six and seven also developed as a descriptive framework. The descriptive aspects of the case study are presented in a narrative which describes the interorganisational relationships within the network universities. This descriptive structure complements the theoretical focus of the chapters.

This research combined elements of Yin's three dominant modes of analysis for analysing its case study data: a) pattern-matching, b) explanation-building, c) time-series analysis. However, it mainly used pattern-matching. Pattern-matching compares an empirically based pattern with a predicted one. Yin suggests if the patterns coincide, the results can help a case study to strengthen its internal validity. This research adopted pattern-matching by comparing theoretical constructs drawn from the literature with the qualitative findings.

The research also adopted a qualitative analysis for its literature review and exploration of the Australian higher education sector in the period 1988 to 1993.

This research accepts that its main weakness is its ambition. It aims to examine a wide variety of qualitative data using case study methodologies. It also includes an environmental analysis of Australia's higher education environment and a literature review. It recognises that it is difficult to address all of these research areas equally well and that there will be flaws in some areas. With this in mind, it is hoped that the reader accepts that the sheer scope of this research represents its weakness.
1.6 Propositions

The research tested a number of theoretical constructs drawn from the literature about how organisations will behave in interorganisational relationships within federated network structures. The constructs were presented in chapters five, six, and seven in the form of propositions. The propositions are:

Proposition 1: When organisations operate under conditions of environmental uncertainty, they will seek interorganisational relationships with other organisations in order to reduce this uncertainty.

Proposition 2: Organisations will seek to form that type of interorganisational relationship which involves the least cost to the organisation in loss of autonomy and power.

Proposition 3: Organisations will develop interorganisational relationships with other organisations if the relationship can provide them with access to necessary resources.

Proposition 4: Organisations' perception of whether they are in a voluntary, mandated or partially mandated relationship will influence their behaviour within an interorganisational relationship.

Proposition 5: If a federated network structure begins without a formally agreed upon network configuration, network members will be forced to construct their own configuration.

Proposition 6: The ability to make and administer rules regarding possession, allocation, or use of resources will be a critical source of control within a federated network.

Proposition 7: The central coordinating agency within a federated network structure will play an important role in resolving or managing interorganisational conflict.

Proposition 8: A federated network structure will result in conflict between network members.

Proposition 9: Cooperative interorganisational relationships within a federated network will occur when exchanges between members result in greater benefits than the costs involved in maintaining the relationship.

Proposition 10: In federated network structures which result in the loss of power and autonomy for network members, interorganisational conflict will result between the network members.
Proposition 11: Competition for scarce resources by network members within a federated network structure will result in interorganisational conflict.

Proposition 12: In a federated network structure, network members will be primarily concerned with the acquisition of funds and authority.

Proposition 13: A federated network structure will result in duplication of resources and activities.

Proposition 14: The strength of the relationships within a federated network structure will be greatly increased by multiple ties between network members.

Proposition 15: The removal of duplicated resources or activities within a federated network structure will not ensure improved performance of the network.

Proposition 16: A federated network structure will improve network member performance.

The research findings explored theoretical constructs by testing the propositions listed above.

1.7 Delimitations Of The Research

This research is limited to the three Australian federated network universities. These organisations were chosen because they were the only three universities of their type in Australia. It may be argued that other overseas network universities could have been included in the study, however, this was beyond the scope of this research.

The research findings are limited to qualitative data. The research did conduct a survey, however, it was decided that the quantitative analysis derived from this survey did not enhance the overall findings and the analysis was excluded.

The quantitative analysis was also limited to surveying only one of the subject organisations. It may have been possible to carry out a mail survey of respondents at the University of New England and Charles Sturt University, however, this was not considered suitable for the purposes of the research. The research required face to face interviews in order to fully explore the qualitative as well as quantitative aspects of the survey. The logistics and cost of face to face interviews at six campuses spread throughout New South Wales was considered prohibitive. Instead, the research held face to face interviews with nine very senior staff at UNE and CSU in order to supplement the qualitative data.
While the delimitations of the research methodology are acknowledged, it is felt that it was suitable for the purposes of gaining an understanding of Australia's three federated network universities and they served the purposes of the research.

1.8 Outline Of The Thesis

The thesis is presented in one volume.

Chapter one introduces the thesis. It outlines the research problem, methodological weaknesses in the Interorganisational Relations literature, the contributions of the research, definition of key terms, methodology, delimitations of the research, an outline of the thesis, and a brief summary.

Chapter two presents a summary of the findings of the literature review. It aims to provide a theoretical framework for the research. Further components of the literature review are included in the introduction to each section in chapters 5, 6 and 7.

Chapter three outlines the methodology used to gather the qualitative data, the data collection instruments, and the identification of criterion variables. It also describes the analytical techniques used to analyse the data collected.

Chapter four presents a summary of the findings of a review of Australia's higher education environment in the period 1988 to 1993. Interorganisational Relations is fundamentally concerned with how organisations interact with their external environment. This chapter provides an important context for the qualitative findings which follow by outlining the key issues which emerged in the higher education environment during the period the network universities were under review. The findings of this chapter are linked with chapter seven by exploring some of the issues which emerged as important in the higher education environment in the context of the performance of the network universities.

Chapter five presents the historical context of the formation of the interorganisational relationships within each of the three network universities. It considers the environmental uncertainty faced by the network universities, the network configuration, and their initial understanding of the federated network structure.

Chapter six presents the research's main findings and examines the network structure in operation. It begins with an analysis of the governance structures at each of the network universities. It then analyses the interorganisational relationships between network members and between the members
and the central coordinating agency at each of the network universities. It concludes by considering the specific structural aspects of the network structure.

Chapter seven presents the review of the performance of the network universities between 1988 and 1993 along three dimensions: effectiveness, efficiency, and from an interorganisational relations perspective.

Chapter eight presents the research's conclusions and recommendations. It aims to draw generalisable conclusions from the research's qualitative and quantitative findings. It also presents some future directions for improving interorganisational relationships within federated network structures including structural issues, managing the political economy, the literature's solutions, and an adhocracy. It concludes with a summary of implications for Government and the institutions themselves and identifies issues which the research has highlighted as requiring further research.

1.8 Summary

This chapter introduced the thesis. It provides a framework for the research by outlining the research problem, methodological weaknesses in the Interorganisational Relations literature, the contributions of the research, definition of key terms, methodology, delimitations of the research, and an outline of the thesis. This foundation makes it possible to now turn to the literature review.
CHAPTER TWO : THE LITERATURE REVIEW

Introduction

This chapter presents the findings of the literature review. It aims to critically review the literature and identify weaknesses in its treatment of Interorganisational Relation's key issues, some of which this research addresses. It then aimed to identify theoretical constructs which combined to provide a comprehensive framework for analysing interorganisational relationships within federated network structures.

The Review Of The Literature

2.1 Overview

The literature review aims to present a comprehensive review of the Interorganisational Relations literature. However, it was restricted by focusing on those areas of the literature most relevant to the research. There are several other areas of the literature which are relevant to this research. These include the extensive specialist literature on the management of higher education institutions, literature on multi-campus universities, and literature on political theory including federalism. Work on higher education management by Harman and Meek (1988), Clark (1965), Hills and Mahoney (1978), Meek and Goodegebuure (1991), Parry (1988), Vaizey (1972), and Weick (1976); and work by Salancik (1974), Sebring (1977), and Stern (1979, 1981) on multicampus university management is included in this review and in the discussion of theoretical frameworks in the main research findings. It is accepted that there is a substantial body of literature not included in this review, however, the extensiveness of this chapter's review of the Interorganisational Literature meant that other relevant but not directly related literature was excluded. For this reason, the literature on federalism was not included because it was felt the political frameworks of Interorganisational Relations were sufficient for the analysis of federated networks. The literature on Interorganisational Relations and network analysis is essential to the study of relations between network members and central administration of federated network universities because the federated network structure is one of four main forms of interorganisational interaction. The research aimed to explore the federated network universities from an Interorganisational Relations perspective and while political and other relevant frameworks are included the main focus was on the Interorganisational Relations literature.

The review begins with an overview of Interorganisational Relations in order to establish a theoretical
basis for what is to follow. It then discussed key studies conducted on federated network structures in order to select a framework for analysis. The review then looked at the different research traditions that have emerged in the field of Interorganisational Relations and focused primarily on three areas of particular importance to the study: the exchange perspective, the resource-dependence perspective and mandated relationships. It concluded by looking at a number of other dimensions which were relevant to the study. Some areas of the literature which are particularly important to this research, such as the performance of interorganisational relationships and federated network structures, are included in the review's other dimensions because they are not yet a major part of the literature.

The structure of the literature review is designed to complement the structure of the qualitative analysis findings. The qualitative analysis reviews the interorganisational relationships within the network universities in the period 1988 to 1993. In doing so, it begins by providing an historical context and analyses the processes which brought each network to its current state. The research's conclusions and recommendations examine some future directions for improving interorganisational relationships within federated network structures.

The literature provides a theoretical framework for these analyses by exploring the historical context through the reasons for relationship formation, mandated relations and the exchange perspective; the processes leading to the network's current state through the use of coercion, force and power, the resource-dependence perspective and interorganisational conflict; the performance of the network through the effectiveness of interorganisational relationships; and how to improve relationships within a network structure through coordination, collaboration, interorganisational groups, boundary spanners, interorganisational conflict management, and managing the political economy. The literature review also identified weaknesses within the literature which were explored throughout the research.

2.2 A Definition Of Interorganisational Relations

2.2.1 Introduction

The field of Interorganisational Relations is primarily concerned with how organisations interact with other organisations in their environments. In recent years, Interorganisational Relations has grown in popularity among organisation theorists. Pennings (1981) suggested that organisation theorists shifted their attention from intraorganisational to interorganisational phenomena due to the recognition that organisations are influenced by their environments.

The importance of the environment on organisations is probably due to the emergence of open
systems theory in the late 1950's. Researchers such as Dill (1958) introduced the proposal that organisations are open rather than closed systems which interact with their environments to facilitate the flow into and out of organisational boundaries of inputs and outputs. The growth in popularity of the field of interorganisational relations is probably due to the notion that organisations must analyse how their environment affects them in order to survive and succeed.

In the behavioural sciences, the first steps in building a systems theory were taken in conjunction with the analysis of internal processes in organisms, or organisations, when the parts had to be related to the whole. Examples of this work were done by biologists such as Jennings and Cannon and the classical theories of social structure. Much of this research could be represented in closed-system models. The next steps were taken when wholes had to be related to their environments. This led to open-systems models. Von Bertalaffy (1950) first fully disclosed the importance of openness or closedness to the environment as a means of distinguishing living organisms from inanimate objects.

Since then, theorists such as Turk (1970) and Whetten (1981) have suggested that any large and complex social setting may be viewed as an aggregate of organisations which appear, disappear, change, merge, and form networks of relations with one another. Warren (1969) and others call this an interorganisational field. Turk attempted to define social integration in organisational terms and provided a test of its ability to predict new interorganisational activities and the complexity of certain networks within which these activities took place.

2.2.2 Perspectives on Interorganisational Relations

2.2.2.1 Introduction

There is a fragmented body of accumulated knowledge on Interorganisational Relations. The variety of thought reflects the perceptions and research interests of the scholars involved. Whetten (1981) suggests that the literature's fragmentation is due to the fact that the field has attracted the interest of scholars from a variety of disciplines and because each group is interested in a different facet of Interorganisational Relations, different research traditions have emerged. This diversity of thought is illustrated in the various definitions of Interorganisational Relations which have emerged. This review has grouped the literature into three research arenas: the exchange perspective, the resource dependency perspective and mandated relations. This section will provide an overview of the field by introducing these three arenas and providing an analysis of how they view Interorganisational Relations.
2.2.2.2 The Exchange Perspective

The exchange perspective of Interorganisational Relations defines relationships between organisations within a social exchange framework. The exchange perspective examines Interorganisational Relations by focussing on environmental uncertainty or organisational exchange.

Theoretical frameworks derived from environmental uncertainty consider interorganisational relations as a means of controlling or reducing the influence of the environment on the organisation. Theoretical frameworks derived from organisational exchange focus on resource procurement and consider interorganisational relations as a means of gaining necessary resources for the survival and success of the organisation.

2.2.2.3 The Resource-Dependence Perspective

The resource-dependency perspective of Interorganisational Relations defines relationships between organisations within a political framework. The resource-dependency perspective examines Interorganisational Relations by focussing on organisations' resource-dependency or political theories.

Theoretical frameworks derived from the pure resource-dependency framework is an extension of organisational exchange. It is used to explore how organisations seek to reduce their dependence on others for resources and, in turn, to increase others' dependence on them within the political processes of interorganisational relationships. The power or political theories are used to explore the pursuit of funds and authority within interorganisational relationships.

2.2.2.4 The Mandated Relations Perspective

The mandated relations perspective of Interorganisational Relations defines relationships between organisations in terms of the nature of the agreement that binds them together. The literature makes a distinction between mandated, voluntary and partially mandated relations. In each case, the strength of the mandate or lack of it are seen as crucial to the behaviour of the member organisations involved in the relationship.

The importance of voluntary relationships is that the organisations involved are willing participants who perceive mutual benefits and believe that their relation will allow them to better achieve their goals than if they were entirely independent. The underlying importance of mandated relations is the mandate
itself. The third major basis for interaction is the partially mandated relation. In partially mandated relations, the mandate is created by formal agreement while the legal-political network is imposed by law.

### 2.2.2.5 Operational Definitions

Interorganisational Relations may also be defined in terms of the various forms of interorganisational linkage. Evan (1966), Elesh (1973), Galaskiewicz (1979), Van De Ven, Walker and Liston (1979), Aldrich and Whetten (1981), Boje and Whetten (1981) and Whetten (1981) have conducted research on the forms of interaction within interorganisational relations. Van De Ven et al suggest that one of the basic stumbling blocks in analysing interorganisational relationships is to find a way to quantify and explain the configuration of relationships among organisations within it. Theorists have tried to overcome these difficulties by presenting various frameworks for analysis and tools for the researcher.

Whetten (1981) identifies four forms of basic interorganisational interaction: dyadic linkages, organisation sets, action sets, and networks. The simplest form of interaction is dyadic. A dyadic linkage is formed when two organisations find it mutually beneficial to collaborate in accomplishing a common goal. eg. joint ventures. A related form of interorganisational interaction has been labelled an "organisation set" by Evan (1966). This refers to the total sum of interorganisational linkages established by an organisation. It is important to note that an organisation set is constituted around a focal organisation. Hence it is not a true network because although the dyadic linkages between the focal and interacting organisations are examined, the relations between the interacting organisations are ignored. The third form of interorganisational relations is called an "action set". Action sets are essentially purposive networks; they are coalitions of organisations working together to accomplish a specific purpose. The concept of action set refers to an interacting group of organisations, whereas the concept of organisation set is explicitly centred on a single focal organisation. The final form of interorganisational relations is a network. A network consists of all interactions between organisations in a population, regardless of how the population is organised into dyads, organisation sets, or action sets. As represented in graph or matrix form, a network is a static entity. Whetten suggests that the pattern of interorganisational relations represented in this form becomes most instructive to an investigator when he or she understands the dynamic processes that generated the contemporary configuration. This requires an in-depth understanding both of the contextual factors impinging on the entire network and the evolutionary processes occurring within the dyadic and action set components of the network.

There have been two comprehensive reviews of the interorganisational literature: by Whetten (1981) and Galaskiewicz (1985). Galaskiewicz found that there were three arenas of interorganisational relations: resource procurement and allocation, political advocacy, and organisational legitimation. In studying interorganisational relations within the resource procurement and allocation arena, analysts
have focused on power dependency and the problems of overcoming environmental uncertainty. In studying interorganisational relations within arenas of political advocacy, analysts have paid special attention to coalition formation and efforts at collective action. In studying interorganisational relations within arenas of organisational legitimation, analysts have examined organisational efforts at identifying with highly legitimate community and/or societal symbols. Research within these three arenas has been done at the level of the dyad, action set, and network. Whetten suggests that although a great deal of the interorganisational relations research has been descriptive, a large segment of it has been explicitly prescriptive in that it has sought ways to improve interorganisational coordination. Whetten reviews the field by organising it into four categories: structural forms of coordination, antecedents of coordination, a model for improving coordination, and the unintended side effects of coordination. While coordination is an important means for improving interorganisational relations, more research needs to be done on areas of interorganisational conflict resolution, effective interorganisational groups, and effective boundary spanners.

2.2.2.6 Conclusion

Interorganisational Relations studies how organisations interact with other organisations in their environments. Organisations exchange resources for mutual benefit or reward. In a voluntary relationship, organisations interact because they perceive benefits. These benefits are either reduced environmental uncertainty or resources. Organisations would withdraw from the relationship if there were no benefits to be gained from it. The resource-dependence perspective added an extra dimension to the conceptualisation of interorganisational relations by stating that issues of power, force, conflict and control are fundamental to relations between organisations. The resource-dependence perspective focuses on the ways organisations pursue mutual benefits within interorganisational relationships. A further dimension was added by the complication of whether relations are voluntary, mandated or partially mandated. The mandate plays an important role in the nature of the relation, how it will evolve and whether it survives. Underlying these conceptualisations are various theoretical frameworks which allow researchers to understand and explore the dynamics of interorganisational relations. In analysing interorganisational relations, researchers may be daunted by the sheer complexity of attempting to trace the potentially exhausting links between organisations. The work by Van De Ven, Walker and Liston, Whetten and others provide researchers with a starting point. The various definitions presented in this overview illustrate that what might seem a simple concept in terms of social exchange becomes complex when the underlying tensions and forces which exist within an interorganisational relation are taken into account.
2.3 A Definition Of Federated Networks

2.3.1 Introduction

Networks are one of four forms of basic interorganisational interaction; the others being dyadic linkages, action sets and organisation sets. This section reviews the literature on networks. It begins by reviewing the literature on networks and then discusses federated networks.

There have been numerous studies of networks, however, there have been few empirical investigations of interorganisational relationships within federated network structures. Van De Ven, Walker and Liston (1979) focused on coordination patterns within interorganisational networks; Tichy (1981), Turk (1970), Lincoln and Miller (1979), Wiewel and Hunter (1985), Tichy and Fombrun (1979), and Knoke and Kuklinski (1982) have looked at networks from a social exchange perspective as exchanges between organisations in a social system; Weick (1976) explored networks as loosely coupled systems; Evan (1966) and Metcalfe (1976) viewed networks using the concept of an organisation set; Benson (1975), Cook (1977), Aldrich (1979), Stern (1979, 1981) and Provan (1983) have explored networks as interorganisational linkages concerned with exchange and power; Raelin (1980) has focussed on the concept of mandated networks; while Aldrich and Whetten (1981) attempted to simplify the complexity of interorganisational networks by distinguishing between organisation sets, action sets and networks.

Network analysis is not a new field, however, empirical investigation of interorganisational relations within networks is new. One reason for the lack of research on relations within federations has been the complexity of studying the seemingly unmanageable complexity of social systems within networks. It is quite difficult to present data for network analysis. The most common method is to use graphs or matrices which plot interaction patterns, communication flows and so on. However, this approach is somewhat superficial and does not explain the complex underlying tensions which exist within interorganisational relationships. Aldrich and Whetten express their frustration with the arbitrariness of trying to quantify interorganisational relations. There are also various definitions of federations including linkage networks, mandated federations, voluntary federations, and partially mandated federations. This research proposes that the most sensible approach is to explore the complex forces within a federated network by focusing on its environmental context, historical development, interaction processes and specific structures.
2.3.2 Networks

2.3.2.1 Overview

Tichy, Tushman and Fombrun (1979) suggested that the network approach to analysing interorganisational relations is not new. Its conceptual origins can be traced to three broad schools of thought:

1. Sociology - the process outlook of theorists like Park (1924), Cooley (1956) and Simmel (1950).


Most definitions of networks focus on interaction patterns. This is illustrated by the definitions of some of the literature's leading theorists:

Stern (1979): "A network consists of organisational units and the linkages between them, and the unit of analysis is the totality of the network."

Provan (1983): "A network generally refers to a group of organisations that share common organisational ties and can be recognised as a bounded interorganisational system."

Whetten (1981): "A network consists of all interactions between organisations in a population, regardless of how the population is organised into dyads, organisation sets or action sets."

Cook (1977): "An exchange network is a set of three or more actors each of whom provides opportunities for transactions with at least one other actor in the set."

Tichy, Tushman & Fombrun (1979):

"Network analysis is concerned with the structure and patterning of these relationships and seeking to identify both their causes and consequences."
Network analysis is one method of conceptualising organisations which captures the intersection of both static and dynamic aspects of organisations by focusing on the linkages between social objects over time.

Aldrich and Whetten (1981):

"The concept of interorganisational networks is often confused with two closely related but dissimilar concepts; organisation-set and action-set...A network is defined as the totality of all the units connected by a certain type of relationship and is constructed by finding the ties between all the organisations in a population under study, regardless of how the population is organised into organisation-sets or action sets."

These definitions illustrate the need to provide a more rigorous definition of networks which takes into account the complexities and underlying tensions of relationships within a network.

Relations between pairs of organisations, whatever their content, could be extended and organisations included in ways that would expand a network indefinitely. A central interest of network theorists has, therefore, been ways to set meaningful limits to the scope of an interorganisational aggregate. Whetten suggests that the concepts of organisation-set, action-set, and network provide theorists and designers with a rationale for setting boundaries.

2.3.2.2 Federated Networks

Provan (1983) was the first theorist to provide a comprehensive investigation of federated network structures. He examined the federated network structure as a unique type of interorganisational linkage network, first discussing the reasons why organisations may form or affiliate with a federated network and then describing the various types of federations that exist.

Provan suggests that many general discussions of interorganisational relationships have addressed the issue of control and management of network linkages, at least implicitly, but few of these discussions have focussed on the unique properties of federations as specific mechanisms for linkage control. Researchers have sometimes conducted empirical studies of federated network structures, but these have tended to focus on one specific type of federation rather than on the differences among federations of different types.

Although the comparative study of federated network structures as a type of interorganisational linkage network has not been the focus of much research, several reasonably comprehensive
discussions of federated networks have appeared in the literature. One of the earliest discussions was presented by Litwak and Hylton (1962). They introduced the important concept of "coordinating agencies". Federated networks were also discussed by Warren (1967) as one of several ways in which "community decision organisations" may be linked, thus forming what he called an "interorganisational field." Warren also introduced a continuum of interorganisational involvement and interdependence ranging from social choice to unitary involvement. More recently, Pfeffer and Salancik (1978) have discussed what they refer to as "organised coordination of interdependence" among organisations.

Taken collectively, the work of all of the theorists cited thus far has facilitated a general understanding of federated networks. Provan addressed the need for a more comprehensive examination of the federation as a type of interorganisational linkage network. Provan suggests that there are differences between federated linkages and non-federated linkages which had not been sufficiently addressed by the literature.

A network generally refers to a group of organisations that share common organisational ties and can be recognised as a bounded interorganisational system. Provan argues that what distinguishes a federated network from most other networks is the control and management over their own interorganisational activities, especially when there are few organisations in the network. One organisation may be more able to influence the direction of the network than another, especially if relative dependencies among the linked organisations are not equal, but control over their joint activities still rests with the organisations themselves. In a federated network, however, network member organisations agree to relinquish control over certain activities to the federation's management. In return, members expect the federation's management to minimise the complexity of the network and reduce environmental uncertainty. Provan suggests that because members do not fully control their interorganisational activities, relationships between federated members are often quite different from most other types of networks, thus presenting difficulties when making generalisations based on past research.

Federated networks are formed based on a perceived need to coordinate, manage, and control the interdependent activities of two or more organisations. This need may be based on either the perceptions of the management of the members or on the perceptions of an outside group whose interests would best be served by the creation of a federation (government) Mandated federations are imposed on organisations (sometimes to their own benefit), but voluntary federations typically evolve because of the difficulty of coordinating more independent linkage arrangements.

Provan suggests that control is the principal way of distinguishing between a federated network and other types of networks. When an organisation joins a federation, it relinquishes at least partial control over decisions regarding those of its activities that are managed by the federation administration, or what Provan calls a federation management organisation (FMO). The FMO generally allows considerable day to day operating autonomy for members, but all members must act on behalf of the interests of the federation as a whole, at least regarding those issues managed by the FMO. In return
for general federation support, the FMO acts on behalf of the interests of all members. In addition, in most cases, the FMO owes even its existence to the support of its members. Thus, although quite different from linkages among non-federated organisations, relationships between members within a voluntary federation and their FMO can be viewed as an exchange relationship.

Provan suggests that only when federation affiliation is mandated by law does exchange theory break down. It is here that the real basis for distinguishing between federated networks and other types of networks lies. The degree of control desired by the members and the degree of control granted by the members to the FMO determines the nature of the network and distinguishes the federated network from a linkage network. This point is best explored through Provan’s identification of three distinct types of federations: participatory, independent or mandated network.

The diagrams which follow represent various interorganisational networks including Provan’s three types of federations. They may be understood by the following key:

The circle represents organisations in the network.
The square represents the federation management organisation (FMO).
The triangle represents a third party attempting to monitor the activities and decisions of affiliates.
The line ... represents a strong relationship.
The dotted line .... represents a moderate strength relationship.
Provan provides the following information which distinguishes between the various types of interorganisational linkage networks:

<table>
<thead>
<tr>
<th>Network Characteristic</th>
<th>Coalition</th>
<th>Participat. Federation</th>
<th>Independ. Federation</th>
<th>Mandated Federation</th>
<th>Owned Systems</th>
</tr>
</thead>
<tbody>
<tr>
<td>Basis for Affiliation</td>
<td>mutual benefit or stability</td>
<td>previous plus complexity reduction</td>
<td>previous plus legitimacy</td>
<td>legal mandate or strong external pressures</td>
<td>ownership</td>
</tr>
<tr>
<td>Participation of Affiliates in Network Management</td>
<td>high</td>
<td>moderate</td>
<td>low</td>
<td>low</td>
<td>low</td>
</tr>
<tr>
<td>Number of Organisats in the Network</td>
<td>few to moderate</td>
<td>moderate</td>
<td>moderate to many</td>
<td>few to many</td>
<td>few to many</td>
</tr>
<tr>
<td>Primary Source of FMO Power</td>
<td>N/A</td>
<td>affiliates</td>
<td>affiliates</td>
<td>third party</td>
<td>owners</td>
</tr>
<tr>
<td>Importance of Network for Legitimacy</td>
<td>low</td>
<td>low to moderate</td>
<td>moderate to high</td>
<td>high</td>
<td>low to high</td>
</tr>
<tr>
<td>Essentiality of the FMO</td>
<td>N/A</td>
<td>high</td>
<td>low to high</td>
<td>moderate to high</td>
<td>moderate to high</td>
</tr>
<tr>
<td>Substitutability of FMO</td>
<td>N/A</td>
<td>moderate to moderately high</td>
<td>moderate to low</td>
<td>low</td>
<td>low</td>
</tr>
<tr>
<td>Network Structure</td>
<td>1st diagram</td>
<td>2nd diagram</td>
<td>3rd diagram</td>
<td>4th diagram</td>
<td>varies depending on control of mgmt</td>
</tr>
</tbody>
</table>
From the diagrams and the table of network characteristics, it is obvious that the degree of control of the central coordinating agency (or FMO in Provan's terms) distinguishes federated networks from normal linkage networks. Provan suggests that when organisations are involved in an explicit, cooperative, non-federated linkage arrangement described as a coalition, they interact directly with each other for purposes of managing their interdependence. Under these conditions, control of resource flows still reside with the linked organisations themselves. In contrast, in any type of federated network, the flow of at least some of the resources needed by members is controlled by the FMO. The distinguishing feature is the control of resources by the FMO which gives it a certain power or authority within the network.

However, Provan fails to address the problem of a federated network which appears to be a mandated federation because the members are forced by law to affiliate with other members and the FMO but for various reasons feel they are involved in a participatory federation and maintain an active role in federation management, not only through involvement with the FMO, but through their involvement with each other regarding issues of concern to the entire network. It is a problem of perception as much as of network characteristics. Under these circumstances, the FMO and the members must reach common agreement on whether they are a participatory or a mandated federation and almost as importantly, the external or third party must also have a similar perception. This will ultimately decide the degree of control of the FMO and in turn the nature of the network.

2.3.2.3 Network Analysis

Theorists generally agree that a major problem confronting persons seeking to design or study networks of interorganisational relations is how to cope with the seemingly unmanageable complexity of social systems. Tichy et al, Aldrich and Whetten, and Stern suggest that the sheer volume of interaction within a network make the study of networks daunting. However, this research suggests that the volume of interaction is not important. An analysis of who talks to whom within a network and for what reasons would result in superficial research and limit interorganisational analysis to the level of communication studies.

Aldrich and Whetten (1981) suggest that the pattern of interorganisational relations observed in a cross sectional study attains its primary theoretical importance only when an investigator is able to understand the process that brought the network to its current state. This complexity results from the underlying tensions and forces within a network. While the measure of interaction within a network is relatively simple, the nature of the interaction is not, and it becomes complex when the volume of interaction is multiplied by the interaction's underlying tensions and forces.

Aldrich and Whetten suggest that not only have a large variety of substantive topics involved studies
using a network perspective, but there has been considerable variety in the analytical techniques used in these studies. The authors review various means of analysing network properties. The typical forms for representing data in a network analysis are directed graphs and matrices. An interorganisational network can be represented in the form of a graph, with arrows connecting the points in a population of organisations that have a relationship, and with the directionality of the relation indicated by the head of the arrow. An interorganisational network can also be represented in the form of a matrix. Tichy, Tushman and Fombrun (1979) describe four data collection methods from which to analyse networks. They are:

1. Positional Analysis (Formal Communication/Influence)
2. Reputational/Attributional
3. Decisional Analysis
4. Interactional Analysis

They suggest that network analysis relies heavily on sociometric data. Sociometry is a method for ascertaining the relationship between units. The degree to which each unit is related to all other units is mapped. The authors suggest that sociometric data is perceptive. It is easy to collect, but once it is collected, there are immense difficulties in analysis. They suggest that the fourth data collection method - Interactional Analysis - is the best method because it has all the benefits of the other three methods, is easy to gather and its data is reliable. However, the weaknesses of the approach are that it is difficult to define boundaries, a high questionnaire return rate is needed, it is costly to manage and administer and it requires a high commitment on the part of the respondent. Interactional analysis may be used for this research by simply asking top managers within each of the network members and headquarters the following question:

"Think back over the past month. Consider all the people in your organisation; ie. your superiors, your subordinates, and people at the same level as yourself. Please write down the names of those with whom you have spent the most time on work matters. List the names, in order, so that the first person is the one with whom you have spent the most time."

However, this approach is limited. While it will provide an insight into interaction patterns within the network, there is more to interorganisational analysis than simple interaction patterns. Others, Tichy and Fombrun (1979), Lincoln and Miller (1979), Guetzkow (1965), Rogers and Agarwala-Rogers (1976) support the notion that interorganisational analysis is best examined through interaction patterns or communication flows. Lincoln and Miller examine the conditions that give rise to distinctive patterns of network ties among employees in organisations. The authors do not explicitly address communication flows, however, they do adopt the premise of other writers that relationships within networks function chiefly as communications media. Lincoln and Miller's study examined the characteristics of individuals in organisations that determine the sequences of direct and indirect ties between them, in order to arrive at insights into organisational communication processes. Lincoln and Miller make an important point about the nature of communications within a network. Certain attributes
of organisation participants, particularly those that confer status both in the organisation and the larger society, influence network ties by placing high-status persons in central positions. Their study found that persons in positions of authority have maximal access to others as indicated by the length of the chains of social contact which connect them to one another and to their subordinates. They argue that the number of communication channels converging on an individual also increases with their education. This suggests that the strategic importance of a position in a system of official role relationships is proportional to its incumbent's expertise. It is reasonable to assume from this that channels of communication within an organisation and within a network are heavily routed through persons possessing formal authority and expertise.

This research proposes that the measure of who interacts with whom within a network and why is simply a component of network analysis. Theorists have developed various tools and frameworks in trying to take network analysis beyond interaction or communication analysis. Aldrich and Whetten (1981) conclude that a comprehensive analysis of a network must include the following concepts; density, loosely joined relations, reachability, distance, hierarchy, and centrality. Tichy, Tushman and Fombrun propose a list of elementary network properties which may be applied to a network in order to facilitate analysis.

Deliberations about the appropriateness of using these various linkage-measurement approaches should consider two factors. First, the content of links in a graph or matrix can be as simple as whether someone from one organisation knows anyone in a second organisation, or as complex as the overall intensity of a relation. Most quantitative network analyses have treated relatively simple links, whereas more complex links have been dealt with mainly in more qualitative fashion.

The most distinctive functional and structural component of federated networks in the existence of some form of controlling or coordinating body called coordinating agencies by Stern (1981), linking-pin organisations by Aldrich and Whetten (1981) or federated management organisations (FMOs) by Provan (1983). These bodies have extensive and overlapping ties to different parts of a network play the key role in integrating a population of organisations. Three functions of linking-pin organisations are particularly important: a) they serve as communication channels between organisations; b) they may provide general services linking third parties to one another by transferring resources, information or clients; and c) if they are dominant or high-status organisations, they may serve as models to be imitated by other organisations, or they may use the dependence of other organisations on themselves to direct actively the behaviour of action-sets. Aldrich and Whetten conclude that networks, unlike action-sets, are in large part a construct of an investigator and a network identified for any particular analysis is only a partial network from a larger schema that might have been constructed.
2.3.2.4 More Complex Network Analysis

A comprehensive analysis of networks requires an understanding of the forces and tensions within the network. Aldrich and Whetten (1981) synthesised the research and theorising which exists within the literature and proposed a model of interorganisational network evolution. They conclude that "the pattern of interorganisational relations within a network only attains its primary theoretical importance when the researcher is able to understand the process that brought the network to its current state."


Gouldner (1959) provides an accurate insight into the tensions existing within the network in an essay on the inherent tension between the need for integration within the system as a whole and the need for autonomy expressed by individual system members, he depicts the tension as follows:

"...what is a threat from the system's standpoint is a defensive manoeuvre from the part's standpoint. Conversely, the system's defences against these are, in turn, threats to the part's defences. Consequently, it has to be expected that efforts to reduce the threatening behaviour of either the part or the system will be resisted. In short, not only efforts to change the system, but also those directed at maintaining it are likely to entail conflict and resistance."

Gouldner discussed various strategies used by both part and system in this struggle of interests. For the system, these strategies include: a) admitting only members who pledge allegiance to the goals of the system; b) expanding the system to engulf new members sympathetic to the system's goals; c) exercising selective risk, or delegating critical metabolic functions to trusted sub-systems. Strategies utilised by members to increase their autonomy include: a) withdrawal from the system; b) spreading risks by fulfilling critical needs through membership in several systems; c) attempting to reorganise the entire system to suit their purposes better.

Aldrich and Whetten (1981) suggest that a related topic which deserves additional attention is the dysfunctional consequences of coordination. This suggests that coordination is not necessarily desirable. The disadvantages of a richly joined system include its instability and inability to respond rapidly to changes in a heterogenous and dynamic environment. The authors suggest that such organisations also have a powerlessness to control their own environment and significant loss of autonomy.

Stern (1981) examined the historical transformation of a network by focusing on 1) four determinants of network structure - administration: the basic ideas of control through administrative structure and the ability to make and administer rules, coupling: the nature of the connectedness between units in the
network often defined as the degree to which events within one part of a system are felt by other parts of that system, multiplexity: linkages characterised by the number of ties and amount of material which connect any two units, and new resources: power may come either from internal network structure (as described above) or from access to valued resources external to the network - and 2) the process that link structure to organisational interests. He proposes that network analysis relies on the assumption that the relationships between social actors in a population can be represented by a set of ties amongst the actors. Once the pattern of ties is identified, a researcher can use this network structure as a tool to examine such things as the diffusion of change within a population or the concentration of resources and information among the actors. Stern suggests that when the structure of connections is coupled with a description of the processes that maintain the network links, then power relationships, resource mobilisation, and coalition formation may be examined.

Stern's work added further depth to network analysis by arguing that network activity is a function of the historical development of relationships as well as current structural characteristics, and, second, that the explanatory power of the network approach depends on an analysis of the processes that link network structure to the interests of organisations in the network. Stern derived his theoretical construct from work done by Benson (1975) and Aldrich (1978,1979). He suggests that these theorists had synthesised the interorganisational relations literature into a set of basic concepts and variables for interorganisational network analysis.

Stern concludes that networks change over time and the four structural determinants above are not static forces. Stern refers to federated networks as providing the means of establishing reciprocity among member agencies. He states that federations serve an important purpose in reducing environmental uncertainty and securing a stable flow of resources to member agencies.

Larson (1992) explored networks as a form of interorganisational dyads. He examined social control in networks through a sample of dyadic relationships established by high-growth entrepreneurial firms. He proposed the network as an alternative to vertical integration for entrepreneurial firms. Larson examined how control is exercised within network structures in different entrepreneurial settings. He considers various ways to organise entrepreneurial firms and concludes that the network structure avoids many of the traditional structural problems while institutionalising cooperation, shared information, and assured results, all of which are considered benefits of vertically integrated exchange. Larson suggests that the network offers advantages specific to entrepreneurial firms and argued that they were a flexible alternative to integration because they offered many of the strategic benefits of vertical integration while avoiding the capital investments and bureaucratic inefficiencies of vertically integrated units.

Gerlach (1992) extended the business potential of the network structure in his study of Japanese inter-corporate relationships in terms of three different structures of interaction: corporate groupings, financial centrality, and industrial interdependency. He found that the position of industrial firms in the network was largely determined by corporate group membership (ie. keiretsu). Gerlach found that
corporate network is marked by an elaborate structure of institutional arrangements that have organised its companies within complex patterns of cooperation and competition. He suggests that the most notable characteristic of inter-corporate relationships in Japan is the existence of the highly visible clique-like patterns based on inter-corporate alliances, or Keiretsu. Gerlach's was one of the first attempts to apply standard network techniques to the overall Japanese corporate network. He found that the Japanese corporate network represents a relatively well ordered structure of relationships among highly differentiated firms and that understanding the precise contours of this structure requires consideration of a set of complex and overlapping structures. He also found that industrial firms share similar positions in the network based upon Keiretsu.

Burns and Wholey (1993) looked at the effects of matrix management on interorganisational networks. They defined matrix management as laying one or more new forms of departmentalisation on top of an existing form. Burns (1989), and Galbraith (1972, 1973) explored the simple matrix which involves liaison roles to provide coordination across functional departments and more complex matrix programs which build upon simple matrix by sequentially adding a matrix director, a matrix department, and a horizontal hierarchy with authority rivaling the vertical-functional hierarchy existing in an organisation. Burns and Wholey extended earlier research by examining the determinants of matrix adoption and abandonment and their affect on networks. They found that it is impossible to discern the precise motives for decisions to adopt matrix management.

Burns and Wholey's research is particularly important in the context of this research because it proposes that a way to achieve synergy from the network structure is to introduce matrix management structures within an adhocracy which complements the federated network structure.

2.3.2.5 Conclusion

Federated network structures are created for the benefit of the network members. This may be to improve the capacity of the members to achieve their goals, the network's goals or goals for society as a whole. The underlying assumption is that the members can achieve more by being part of the network than they could as independent organisations. Networks may be voluntary or mandated or even partially mandated but in each case the members will feel that the network should provide benefits or rewards which outweigh the cost of being involved in the network. If the benefits do not outweigh the costs, the network members will resist the network and want to withdraw.

The sum of the whole network should exceed the sum of its parts. Aldrich and Whetten (1981) suggest that by definition, "a network is not a corporate body, and network analysis assumes that a network constrains or facilitates the action of its member organisations and thus is more than the sum of the individual links that comprise it". It is for this reason that network members participate in a
network. Whether the member organisations participate within the network voluntarily or are mandated to do so, it is reasonable to assume they will expect some reward or benefit from the network otherwise there would be no motive to participate. It is also clear that members expect the benefits to outweigh the costs in being a part of the network. The main cost is lost autonomy and control because members must consider other members when making decisions or plans. Therefore, the sum of the achievements of the network as a whole must exceed the sum of its individual member efforts or the members will see no benefit in being in the network and would prefer to remain independent.

The literature lacks adequate empirical investigation of interorganisational relations within networks. This is perhaps due to the apparent unmanageable complexity of social systems within networks. A number of approaches have been developed for network analysis. The most common method is to plot interaction patterns or communication flows using graphs or matrices. However, this presents only a very superficial analysis. A better understanding of networks can be gained by attempting to understand the complex underlying tensions which exist between the organisations involved in a network. Provan provided us with the telling insight into the importance of control as the principal way of distinguishing between a federated network and other types of linkage arrangements. Stern's suggestion that an adequate network analysis must specify the environmental context, interaction processes, historical development, and specific structures of the network is adopted by this research as its basic analytical tool in order to approach an understanding of the underlying complexities within a network.

2.4 The Exchange Perspective

2.4.1 Introduction

Interorganisational relations theorists generally agree that the exchange perspective is one of the field's two dominant theories (the other being resource-dependency). The importance of the exchange perspective lies in the notion that few, if any, organisations are so self-sufficient that they can survive without accessing elements from the external environment. The exchange perspective has two main theoretical frameworks: the environment and its impact on the organisation and the benefits or rewards perceived by the organisation involved in exchange or interorganisational relations with other organisations. Some theorists have focussed specifically on the environment and its impact on organisations; particularly the importance of environmental uncertainty: Emery and Trist (1958), Betton and Dess (1974), Dill (1958), Hirsch (1975), Duncan (1972), Metcalfe (1973), Terreberry (1968), Neilsen and Hannan (1977), Aldrich and Pfeffer (1976), Jurkovich (1975), Dess and Beard (1984), Ancona and Caldwell (1992), McCabe and Dutton (1993), and Boyd, Dess and Rasheed

The distinction between the environmental uncertainty and the organisational exchange theorists is based upon their perception of the interorganisational environment. There are two basic conceptions of the environment in the organisational literature. Organisational exchange theorists see interorganisational relations as a primary means of resource procurement (the basis of the resource-dependence perspective) while those concerned with environmental uncertainty see interorganisational relations as a means of controlling or reducing the influence of the environment on the organisation. The distinction between the two views is based on the perception of the researcher.

The environmental uncertainty approach exemplified by Dill (1958), Weick (1969) and Duncan (1972) treats an organisation’s environment as the flow of information perceived by members at the organisation’s boundaries. While the organisational exchange approach exemplified by Pfeffer (1972) and Aiken and Hage (1968) treats an organisation's environment as the resources available, more or less ignoring the process by which information about the environment is apprehended by decision makers. When the organisation is considered as a stock of resources, the basic concept used by investigators is dependence, defined in terms of the bargaining position of the focal organisation with respect to interacting organisations. When the environment is considered as a source of information, the basic concept used by investigators has been uncertainty. Theorists have generally assumed that complexity and instability of the environment generates uncertainty. Under conditions of environmental uncertainty, particularly resource scarcity, exchange becomes critical. Theorists generally agree that under these conditions, interorganisational relations are instituted because they will allow organisations to control their environment, gain scarce resources and thus reduce environmental uncertainty.

### 2.4.2 Environmental Uncertainty

Emery and Trist (1965) expanded Von Bertalaffy's work and proposed the causal texture of the environment as a construct with which to build on the beginnings of open-systems theory. They propose four types of causal texture: the placid, randomised environment; the placid, clustered environment; the disturbed-reactive environment; and the turbulent field and in doing so introduced the important concept of the interorganisational field. The field was said to be moving under conditions of turbulence. Emery and Trist propose that organisations in such fields faced a great deal of environmental uncertainty and that they had to adapt their strategies to address this uncertainty. In doing so, Emery and Trist introduced the important concept of environmental uncertainty. They
propose that a main problem in the study of organisational change is that the environmental contexts in which organisations exist are themselves changing, at an increasing rate, and towards increasing complexity and uncertainty. They suggest that turbulent fields are those environments in which resources and constraints change constantly and organisations react to one another. They noted that in turbulent fields "the consequences that flow from the actions of organisations lead off in ways that are unpredictable."

Jay Galbraith attempted to address the need for a solution to environmental uncertainty from a structural viewpoint. He suggests that turbulent environments have emerged from economic growth, from increasing socio-economic interdependence, from scientific research and development, and from modern communication systems. Galbraith suggests one adaptive strategy for turbulent fields is the creation of organisational matrices. These are interface organisations "that will maximise cooperation while still recognising that no one organisation could take over the role of the other". The federated network structure would later resemble Galbraith’s interface organisations.

Whetten and Leung (1979) argue that the prevailing perspective among interorganisational relations theorists was that interorganisational relations are instituted because they are perceived by the focal organisation as being instrumental for controlling its environment and thus reducing environmental uncertainty.

Duncan (1972) suggests that organisational theorists emphasise that organisations must adapt to their environment if they are to remain viable. One of the central issues in this process is coping with uncertainty. Duncan aimed to identify the types of environments that contribute to different degrees of uncertainty involved in decision-making. He makes a distinction between the internal and external environment. The distinction is based on the assumption of organisational boundaries: the internal environment consists of physical and social factors within these boundaries and the external environment consists of those outside. He suggests two environmental dimensions can be inferred: the simple-complex dimension and the static-dynamic dimension.

Duncan presents three dimensions of perceived environmental uncertainty:

1. lack of information regarding the environmental factors associated with a given decision-making situation.

2. not knowing the outcome of a specific decision in terms of how much the organisation would lose if the decision were incorrect.

3. the ability or inability to assign probability as to the effect of a given factor on the success or failure of a decision unit in performing its function.

Metcalfe (1973) suggests that the problems facing organisations often seem to exceed the capacity of
the institutions to cope with them. He proposed that despite their diversity, a common thread runs through these problems. They are all from what Drucker calls "the new pluralism;" the emergence of a society of highly interdependent organisations among which most major social functions have been allocated. Metcalfe laments that unfortunately, the mechanisms needed to co-ordinate and integrate the activities of these organisations have not developed at the same rate as their interdependence has grown. The unfortunate result of this shortfall is that organisations are faced with environments that are more complex and unpredictable than they can deal with.

Metcalfe was more interested in the ways in which organisations respond to turbulent environments than the nature of them. Emery and Trist argue that adaptation can be achieved through the creation of an organisational matrix. Metcalfe criticises the matrix theory because it was not made clear what was meant by it. He exposes the weaknesses in Emery and Trist's theory by comparing their four causal textures of the environment with systems, economic and organisational models. He does agree with Emery and Trist's assertion that individual organisations cannot expect to adapt successfully to turbulent conditions simply through their own direct actions. Metcalfe proposes a list of modes of adaptation to environments of different causal textures using the same systems, economic and environmental models as above. He then suggests that organisations can adapt to environments of high complexity only if the component organisations in a system are able to collaborate sufficiently closely to formulate, agree and implement "macro policies" to reduce the variance of their separate environments to manageable proportions. Adaptation requires collective action at the level of the systems as a whole. Independent action may have widespread damaging effects if it triggers off further turbulence.

Terreberry (1968) suggests that an alternative description of a turbulent field is that the accelerating rate and complexity of interactive effects exceeds the component systems' capacities for prediction and, hence, control of the compounding consequences of their actions. Turbulence is characterised by complexity as well as rapidity of change in causal interconnections in the environment. Terreberry concludes that the rapidity and complexity of change facing organisations precludes effective planning for the future; particularly in the long-run. She proposes that the evolution of environments is accompanied, in viable systems, by an increase in ability to learn and to perform according to changing contingencies in the environment. This suggests that a federated network must learn to adapt to its changing environment. Lastly, she provides an integrative common conceptual framework from which to analyse transactional interdependencies which is limited in its application.

Allen (1974) proposes interorganisational elite cooptation, in the form of interlocking corporate directorates, as a cooperative strategy between economic organisations for reducing sources of uncertainty in their environments. Interlocking directorates refer to any situation in which two or more corporations share one or more directors in common. Firms that engage in interlocking directorates attempt to anticipate environmental contingencies and to control their relationships with other corporations.
Aldrich and Pfeffer (1976) suggest that the emphasis in the literature on organisational environments has not been a recent development. Selznick in 1949 and 1960 and Weber in 1968 explicitly included the environment as an important external constraint.

Jurkovich (1985) presented a core typology of organisational environments. He uses the frequently cited works of Thompson (1967) and Lawrence and Lorsch (1967) as a basis for a general description. The two works presented a dichotomisation of diversity and dynamic perceptions which appear to be the same:

<table>
<thead>
<tr>
<th></th>
<th>Thompson</th>
<th>Lawrence and Lorsch</th>
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<tbody>
<tr>
<td>1 Homogenous-stable</td>
<td>1 Low diversity and not dynamic</td>
<td></td>
</tr>
<tr>
<td>2 Homogenous-shifting</td>
<td>2 Low diversity and highly dynamic</td>
<td></td>
</tr>
<tr>
<td>3 Heterogenous-stable</td>
<td>3 High diversity and not dynamic</td>
<td></td>
</tr>
<tr>
<td>4 Heterogenous-shifting</td>
<td>4 High diversity and dynamic</td>
<td></td>
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Jurkovich suggested that in designing action alternatives, decision makers should analyse four major environmental issues: complexity, the routineness or non-routineness of a problem-opportunity state, the presence of organised or unorganised sectors of the environmental field, and the issue of whether such sectors are directly or indirectly related to the organisation.

Milliken (1987) suggests that three types of environmental uncertainty can be experienced by an organisation's administrators as they try to understand, make sense out of, and respond to conditions in the external environment. He proposes the following definition of uncertainty: an individual's perceived inability to predict something accurately. The label environmental when attached to the term uncertainty, suggests that the source of the uncertainty is the organisation's external environment.

Milliken suggests that the three types of perceived uncertainty about the environment are:

1. Uncertainty about the state of the environment: don't understand how components of the environment might be changing.
2. Effect uncertainty: the inability to predict what the nature of the impact of a future state of the environment or environmental change will have on the environment.
3. Response Uncertainty: a lack of knowledge of response options and/or an inability to predict the likely consequence of a response choice.

Ancona and Caldwell (1992) examined the role of organisational teams in managing environmental uncertainty. The concept of organisational teams is an extension of the boundary spanning role which is included in the other dimensions section of this literature review. Ancona and Caldwell suggest that
controlling or reducing environmental uncertainty has become so important to organisations that they are developing teams to manage the problem. They found that over time, teams following a comprehensive strategy enter positive cycles of external activity, internal processes, and performance that enable long-term team success.

McCabe and Dutton (1993) explored the importance of perceived environmental uncertainty (PEU) in the relationship between the environment and organisational effectiveness. They suggest that environmental uncertainty has been considered by both strategic management and organisation theory to be an independent variable in most models of organisational effectiveness. McCabe and Dutton suggest that perceptions of environmental uncertainty, rather than effectiveness, may be the variable to be explained in exploring the relationship between perceptions of environmental uncertainty and effectiveness. They found that perceptions of organisational effectiveness may be important cues for decision makers in making sense of their environment. Their results provided support for Milliken's (1990) earlier research which found that perceptions of organisational effectiveness are related to decision maker's perception of uncertainty.

Boyd, Dess, and Rasheed (1993) developed a framework for explaining both causes and consequences of divergence between archival and perceptual measures of the environment. They identify two central factors that account for this divergence: level of analysis and mediating filters. Boyd et al's review indicates that archival and perceptual measures of environment differ at both theoretical and measurement levels. They suggest that, as a consequence, tests of hypotheses may yield very different or inconsistent results, depending upon the approach used to conceptualise the environment. They propose that precise operationalisation of the environment becomes a crucial component of theory testing. They suggest that the research on organisational environments traditionally has been characterised by two fundamentally different approaches to measurement. Typically, objective environmental measures rely on archival sources and include indicators such as growth in industry sales and concentration ratios. Perceptual environmental measures, in comparison, entail the subjective judgements of the environment by organisation members or key informants. They conclude that the merit of the two approaches depends upon the most appropriate theoretically for a given research question. Archival measures are best suited for measuring external constraints on organisational and should be used by researchers who focus on firm outcomes. While studies of firm actions, such as executive information search or decision making, would benefit most from use of perceptual measures.
2.4.3 Organisational Exchange

Levine and White (1961) define interorganisational exchange as "any voluntary activity between two organisations which has consequences, actual or anticipated, for the realisation of their respective goals or objectives". However, as Cook (1977) points out, the problem with this definition is that it includes any form of voluntary activity between organisations which is not particularly useful because it includes virtually any form of interaction. Blau (1964) tried to narrow the definition of exchange by describing it as "actions that are contingent on rewarding reactions from others". Emerson (1972) extended this by defining exchange relations as "interactive relations between two parties based upon reciprocal reinforcement". Van De Ven, Walker and Liston (1979) define interorganisational relationships as "occurring when two or more organisations transact resources of any kind". Van de Ven et al define exchange as a series of transactions between organisations and add depth to Levine and White's work by including the concept of reward. Cook added further depth by defining an exchange relation as "consisting of voluntary transactions involving the transfer of resources between two or more actors for mutual benefit." The need for mutual benefit introduced the importance of both participant organisations perceiving reward in the relationship.

Under conditions of scarcity, interorganisational exchanges are essential to goal attainment. In order for organisations to achieve their objectives, they must possess or control certain elements in their environment. They must have clients to serve; resources in the form of equipment, specialised knowledge, or the funds with which to procure them; and the services of people who can direct these resources to the clients. Few, if any, organisations have enough access to all of these elements to enable them to attain their objectives fully. Under these conditions of scarcity, organisations must select particular functions that enable them to achieve their aims as fully as possible. Theoretically, if the essential elements were in infinite supply, there would be little need for organisational interaction.

Emerson (1976) suggests that since 1961 there emerged in sociology a distinct approach called social exchange theory. Emerson suggests that social exchange theory is not a theory at all but rather a frame of reference from which many theories - both micro and macro - can be integrated.

Homans (1974) provides three basic propositions about human behaviour which are helpful in understanding the exchange perspective:

1. The Success Proposition. For all actions taken by persons, the more often a particular action of a person is rewarded, the more likely the person is to perform that action.

2. The Stimulus Proposition. If in the past the occurrence of a particular stimulus, or set of stimuli, has been the occasion on which a person's action has been rewarded, then the more similar the present stimuli are to the past ones, the more likely the person is to perform the action, or some similar action, now.
3 The Deprivation-Satiation Proposition. The more often in the recent past a person has received a particular reward, the less valuable any further unit of that reward becomes for him.

Emerson criticises Homans work on the grounds of tautology. Emerson argues that propositions 1 and 2 are not testable and should only be employed as assumptions.

Cook (1977) suggests that the dominant theoretical perspective which has emerged in the discussion of interorganisational relations has been the exchange theory approach introduced by Levine and White (1961). Cook suggests that the exchange perspective and the resource-dependence perspective were based on the same line of thought and that the resource-dependence perspective was derived from the exchange perspective. Cook proposes the following explanation for the formation of interorganisational relationships:

"The formation of exchange relations occurs amongst organisations primarily for two interrelated reasons: specialisation and scarcity. Most organisations perform specialised functions and therefore must exchange with other organisations to obtain necessary resources and to market their output".

Cook suggests that an exchange analysis of interorganisational relationships is fruitful primarily because it focuses attention upon power processes. Power is linked to dependence in exchange formulations. Organisations seek to form that type of interorganisational exchange relationship which involves the least cost to the organisation in loss of autonomy and power.

Wholey and Huonker (1993) investigated the reasons organisations link together in interorganisational networks and contrasted organisational exchange with organisational similarity or "homophily". They suggest that theorists have argued that organisations enter into organisational exchanges to acquire resources they need and do not have. This reasoning suggests that organisations form relationships with organisations that are complementary or dissimilar in the sense that they have resources the focal organisation does not have. Wholey and Huonker suggest that organisations may also form relationships because of their similarity or homophily. This reasoning suggests that similar organisations cooperate to pursue joint or common goals. They argue that many interorganisational relationships involve organisations with socially similar staff, and with similar services and clients. They presented a method for examining interorganisational relationships at the dyadic level. Their method allows the separation of organisational and dyadic effects and discrimination between effects accounted for by homophily and by exchange. Wholey and Huonker’s finding that homophily, rather than exchange, was a determinant of interorganisational networks is consistent with earlier findings that organisations in a network cooperate to deliver services to some population (Alter, 1990; Provan, 1983) or work together to develop resources for the network as a whole (Weiwel & Hunter, 1985).
2.4.4 Conclusion

Whether the researcher views the environment as a source of resources or information, the importance of the environment on organisations is the basic principle of Interorganisational Relations from the exchange perspective.

The exchange perspective suggests that organisations interact and develop interorganisational relationships because very few organisations can survive on their own. They interact with other organisations in order to gain the necessary resources to achieve their goals. Theorists generally agree that another strong motivation to interact with organisations is to reduce environmental uncertainty. It is reasonable to conclude that the two fundamental benefits sought by organisations from interorganisational relationships are resources and reduced environmental uncertainty.

The weakness in the organisational exchange perspective of Interorganisational Relations is that the conceptualisation is too broad. If we take the exchange framework to its extreme, organisation A forms an interorganisational relationship with the local milk bar when someone buys a carton of milk for morning tea. In this case there has been an exchange of resources and both parties have enjoyed mutual benefits; the milk bar received funds for the purchase and organisation A's staff have milk with their coffee. While this is obviously a simple example, it illustrates the need for a more rigorous definition of exchange and raises a number of important issues. The degree of importance of the relation to each participant organisation will influence the degree of desired autonomy, permanence of the relation and need for mutual benefit. In the example above, it is reasonable to assume that organisation A places a low degree of importance in the relation because it can presumably buy milk from any number of other milk bars. This means that the milk bar will have little influence over the autonomy of organisation A, there will be a very low degree of permanence of the relation, and little need for mutual benefit. This point illustrates the need to establish criteria for participant organisations to determine the degree of importance of their various interorganisational relations and how these varying degrees of importance affect them.

The weakness in the environmental uncertainty perspective of Interorganisational Relations is that it may be perceived as seeking to reduce the anxiety of senior executives. Theorists have perhaps focused too heavily on reducing top management anxiety about environmental uncertainty. There are numerous environmental constraints which restrict the strategic decision making of the senior executive. Reduced environmental uncertainty is likely to be only one of many benefits or rewards perceived by the organisation when deciding to enter into an interorganisational relationship. A more helpful approach is to look at the costs and benefits of exchange from the organisation's point of view and assess whether interorganisational relations are advantageous for the focal organisation.
2.5 The Resource Dependency Perspective

2.5.1 Introduction

The importance of the resource-dependency perspective of Interorganisational Relations is that it provides an organisation theory which allows us to understand interorganisational relationships from a political theory of influence. When discussing the resource-dependency perspective, theorists generally agree about the need for organisations to procure necessary resources and the role of politics, power, coercion and force in this procurement.

Confusion arises within the literature from differences of opinion amongst theorists whether the exchange perspective and the resource-dependence perspective are linked directly or indirectly. This research concludes that the two are closely linked but still separate fields of thought. Essentially, the resource-dependency perspective is based on the assumption that organisations need resources to survive and that they seek interorganisational relationships in order to gain these necessary resources. However, in the review of the literature which follows two distinct patterns will emerge. One is the pure resource-dependency perspective which can be linked to exchange theory: Yuchtman and Seashore (1967), Jacobs (1974), Mindin and Aldrich (1975), Aldrich (1976), Aldrich and Pfeffer (1976), Pennings (1981), Ulrich and Barney (1984); and the other is linked to power or political theories: Emerson (1962), Hickson, Hinings, Lee, Schneck and Pennings (1971), Salancik and Pfeffer (1974), Clark (1974), Benson (1975), Wamsley and Zald (1976), Hall, Clark, Giordano, Johnson, and Van Roekel (1977), Tushman (1977), Hills and Mahoney (1978), Zald (1978), Stern (1979), Pfeffer and Moore (1980), Provan, Beyer and Kruytbosch (1980), Boje and Whetten (1981), Stern (1981), Provan (1982), Provan (1983), Mintzberg (1984), Astley and Sachdeva (1984), Lammers (1988), Brass and Burkhardt (1993) and Ibarra (1993).

2.5.2 Resource-Dependency

The pure resource-dependency theoretical framework is an extension of the organisational exchange framework within the exchange perspective of Interorganisational Relations. It extended the simpler concepts of organisational exchange by introducing concepts of dependency and control into interorganisational relationships. The pure resource-dependency theorists argued that relationships formed by organisations seeking resources will produce tensions and conflict as the organisations involved seek to reduce their dependency on others and, alternatively, increase others' dependency on them.

Yuchtman and Seashore (1967) introduced the concept of placing a value on an organisation's
interorganisational relationships rather than them being simply a form of organisational exchange. They suggest that the interdependence of the organisation with its environment "takes the form of transactions in which scarce and valued resources are exchanged under competitive conditions." They also suggest that an organisation's success in this competition for resources should be regarded as an expression of its overall effectiveness. This is an important concept because it implies two crucial notions about interorganisational relations: firstly that organisations interact in order to obtain scarce resources and secondly that the success of an organisation's interorganisational relations may be measured by the volume of resources obtained from the relationship. This places a value on interorganisational relationships beyond simple organisational exchange and suggests that organisations will strive to gain more from the relationship than they give to the other organisation.

Litwak and Hylton (1967) found that autonomy is a critical aspect of interorganisational relationships. Aiken and Hage (1968) suggest that most studies of organisational interdependence essentially conceive of the organisation as an entity that needs inputs and provides outputs, linking together a number of organisations via the mechanisms of exchanges or transactions. They suggest that the measure of the degree of interdependence of an organisation is the number of joint programs. The greater the number of joint programs, the more organisational decision-making is constrained through obligations, commitments, or contracts with other organisations, and the greater degree of organisational interdependence. The definition of interorganisational relationships as joint programs is very restrictive because it comprises only a small proportion of relationships. However, Aiken and Hage's study was helpful because it reinforced Litwak and Hylton's conclusion that relations are not always undertaken voluntarily and the organisation is often constrained by the relationship.

Jacobs (1974) was one of the first theorists to explore the pure resource-dependency perspective when he proposed a model of organisational dependencies. He suggests that formal organisations engage in a constant cycle of activities in order to survive. Inputs, staff or raw materials, are transformed into outputs by the use of production factors, inanimate objects like land, physical facilities, or tools, with the help of a labour force. In one way or another organisations elicit money from their environment in order to sustain this cycle in the future. Thus five points where organisations are dependent on their environment can be identified. These are input acquisition, output disposal, capital acquisition, acquisition of production factors, and the acquisition of a labour force. Organisations vary in the relative importance they must place on these five points of dependence.

Turk (1973) suggests that the need for interorganisational relations is probably related to the awareness of organisations of interdependence with other organisations and results in attempts at coordination. He proposes that the need for formal relations among organisations does not necessarily generate these relations, however, even if capacity for them exists. Need must be translated into demand through communication and compete with other demands such as the need for free enterprise or autonomy. Schmidt and Kochan (1976) argue that interorganisational relationships should be conceptualised as a "mixed-motive situation in which each organisation behaves in accordance with its own self-interests". Boje and Whetten (1981) argue that some
relationships are mandated, however, that most are locally initiated and arise from the needs of network participants. They suggest that interorganisational relationships are emergent in nature. Nystrom and Starbuck (1981) suggest that networks must evolve and change if they are to survive. Schmidt and Kochan (1972) captured the essence of the pure resource-dependence approach when they suggested that it infers that not all potential participant organisations are interested in interaction and therefore, they must be motivated to interact.

Aldrich and Pfeffer (1976) developed a model of resource dependence based on the indisputable proposition that organisations are not able to internally generate either all the resources or functions required to maintain themselves, and therefore organisations must enter into transactions and relations with elements in the environment that can supply the required resources and services.

Aldrich (1976) suggests that the focus of the research on resource-dependence is that "organisations seek to manage their environments so as to reduce dependencies and uncertainties stemming from environmental factors." From this perspective, resource-dependence is closely linked to the exchange perspective. There is an underlying assumption that resources are scarce because of competition from other organisations and that organisations seek to exploit their environment by acquiring the scarce resources better than their rivals.

Mindlin and Aldrich (1975) added complexity to the pure research-dependency model and distinguished it from the exchange perspective by suggesting that organisations must be studied in the context of the population of organisations with which they are competing and sharing scarce resources. They suggest that the attempt of an organisation to avoid becoming dependent on others or to make others dependent upon it is "a major motivating force in the behaviour of the leaders of organisations." Ulrich and Barney (1984) extended this concept by suggesting that acquiring resources is not simply a transaction between organisations but comes by "decreasing the organisation's dependence on others and/or by increasing others' dependence on it."

Provan, Beyer and Kruybotsch (1980), Provan (1982) suggest ways that organisations could reduce their dependence on other organisations and increase others dependence on them. In separate studies; Hills and Mahoney (1978), Pfeffer and Moore (1980), Lodahl and Gordon (1973) and Salancik and Pfeffer (1974) found that university departments that obtained more resources from external sources also obtained more resources from their parent organisation. By acquiring external resources, a department enhances its importance to the organisation as a whole, thus increasing its power within the organisation. Provan (1982) explored the linkages between one group of organisations and an important and powerful supplier of scarce resources. He suggests that the more dependent the focal organisation is on its supplier of scarce resources, the more influence the supplier has on the decision making of the focal organisation. Further, that organisations often will attempt to spread their dependence over a number of organisations so as to minimise the impact of any one organisation on its own decisions.
This last group of theorists are interested in the power resource-dependency can bring to an organisation involved in interorganisational relationships. Their work leads to the power or political theories of the resource-dependency perspective.

2.5.3 The Power or Political Theories of Resource-Dependency

The power or political theories of resource-dependency were a further sophistication of the resource-dependency perspective of Interorganisational Relations. They provided political theoretical frameworks to study the use of power, force, coercion and conflict in the acquisition of resources and authority within interorganisational relationships. In doing so, they filled a major void in the literature.

The political economy model introduced by Zald (1970) emphasised the acquisition and use of power in understanding organisational processes and provided an alternative perspective to the study of interorganisational relations from the exchange perspective. The relationship between the political economy model and the pure resource-dependence model should be clear. Zald suggests that only if one assumes that the environment is not completely binding does the operation of internal organisational political processes become interesting. He suggests that if the environment inevitably constrains social structures to a unique configuration, then internal political processes relevant to organisational decision making become uninteresting, as they must all lead to the same result or the organisation will fail.

Clark (1974) was one of the first theorists to focus on the political forces underlying interorganisational relationships in his paper on interorganisational patterns in education. He suggests that as modern social forces recast education as part of the economic and political institutions of society, numerous adjustments and adaptations must occur within the traditional single institution system, in major segments of the educational system and in the educational system as a whole. The precedent for the Australian Federal Government's Unified National System of Higher Education can be found in Wittich's study of the United States higher education system: College and University Inter-institutional Co-operation (1962). In this study, institutions tended to band together to solve organisational problems: how to grow and yet remain small and how to coordinate across a larger pool of activity while protecting unit autonomy. These problems were rediscovered by Australian universities almost thirty years later. Clark concludes that "a theory of organisations was needed which allowed organisational patterns illustrated by the example of increasing interdependence of higher education institutions in the United States to be understood by a theory of political influence."

Benson (1975) argued that interorganisational networks may be conceived as a political economy concerned with the distribution of two scarce resources, money and authority. Benson argues that
organisations, as participants in the political economy, pursue an adequate supply of resources. The flow of resources into the network depends upon developments in the larger environment. Benson suggests that in the analysis of interorganisational relations, the basic unit of analysis is the network of organisations. Such a unit consists of a number of distinguishable organisations having a significant amount of interaction with each other. Such interaction may at one extreme include extensive, reciprocal exchanges of resources or intense hostility and conflict at the other. Benson suggests that the interorganisational network may be analysed in terms of two related, but partially autonomous, sets of concepts. Analysis may be focused on interaction patterns concerned with the actual performance of core functions or purposes of the organisation. Benson argues that analysis of relations of this kind has been the predominant concern of interorganisational analysts. The second, deeper mode of analysis is focused on the processes of resource acquisition, that is, the activities undertaken by organisation participants in pursuit of an adequate supply of organisational resources.

Benson suggests that "organisation decision makers are oriented to the acquisition and defence of a secure and adequate supply of these resources. Decision makers also seek authority for the legitimation of activities, the right and responsibility to carry out programs of a certain kind, dealing with a broad problem area or focus." He concludes that a fundamental aspect of the political economy of interorganisational relationships is the need for funds and the authority to use those funds autonomously.

The dynamic forces which develop within the interorganisational relationships of organisations involved in a political economy have become a dominant field within the literature. Hickson, Hinings, Lee, Schneck and Pennings (1971) looked at the power of strategic constituencies within an organisation, Boje and Whetten (1981), and Stern (1981) explored the nature of competitive influence within a network, while Astley and Sachdeva (1984) looked at structural sources of power. Work has been done by Salancik and Pfeffer (1974), Pfeffer and Moore (1980), and Hills and Mahoney (1978) on the use of power in the decision making process for University budgets. Zald explored the notion of social control within industries and Lammers (1988) the concept of interorganisational control within occupied countries (the German occupation of Belgium, Netherlands and Norway during the Second World War).

Brass and Burkhardt (1993) explored the relationships between potential organisational power, viewed as structural position, and the use of power through behavioural tactics. They found that structural position, measured as an individual's network centrality and level in the organisation hierarchy, and behaviour - use of assertiveness, ingratiation, exchange, upward appeal, rationality, and coalition formation - relate independently and significantly to others' perceptions of the individuals' power. Brass and Burkhardt suggest that many definitions of power involve the ability of one actor to overcome resistance in achieving a desired result (Pfeffer, 1981), or simply the ability to affect outcomes or get things done (Mintzberg, 1983; Salancik & Pfeffer, 1977). They found that there were two kinds of structural position that serve as bases for power and constraints on behaviour in organisations: formal position or hierarchical level, and informal, or network position.
Ibarra (1993) investigated the relative impacts of individual attributes, formal position, and network centrality on the exercise of individual power, measured as involvement in technical and administrative innovations. His results suggest that an organisation's informal structure may be more critical than its formal structure when the exercise of power requires extensive boundary spanning and that sources of power have both general and innovation-specific effects.

Wamsley and Zald (1976) succinctly summarise the essence of interorganisational relations as a political system:

In general, analysis of political systems has two major components: 1) ethos, or values and 2) power system. That is, 'political' encompasses both power and the values (ends) which power is used to achieve. An economy is a system for producing goods and services. A description of an economy consists of two parts: 1) a statement of the goods and services produced, their quantities, and through which organisational forms they were produced; and 2) a definition of the mechanisms, rules, and institutions that shape exchange of goods and services."

This research concludes that the political economy provides a theoretical framework in order to gain an understanding of the goods and services sought by organisations involved in interorganisational relations and the political processes through which they are obtained.

2.5.4 Conclusion

The resource-dependency perspective of Interorganisational Relations provides theoretical frameworks to analyse the political processes used by organisations to gain benefits from their interorganisational relationships.

The resource-dependency perspective represents an almost natural progression from the simpler early concepts of organisational exchange to more complex and sophisticated notions of control, power, force and coercion within interorganisational relations. Organisational exchange theorists argue that organisations need to interact in order to gain necessary resources. Resource-dependency theorists argue that organisations use political and power processes to gain these resources from the relationship. This means that organisations involved in an interorganisational relationship will be in competition for the scarce resources produced by the relationship. Each organisation will want to gain more from the relationship than it loses. This will inevitably result in conflict and tension as the organisations seek to ensure their benefits outweigh their costs.
A weakness of the resource-dependence perception of interorganisational relations is that it places considerable power with the focal organisation. Organisations and their decision makers may not be in a position to influence resource procurement as the literature suggests. There are many factors which constrain strategic choice and many executives simply cannot choose to enter or withdraw from interorganisational relationships because it suits their resource procurement objectives. The mandated relationship is a good example whereby participants must cooperate with their mandated partners and their strategic options are thus very limited. Another criticism is the too clear distinction between voluntary and mandated relationships. It is implied that organisations in voluntary relationships have substantial power to manipulate their position within an interorganisational relationship while those in mandated relationships have little power. However, this precludes the possibility of partially mandated relationships which transcend the two extremes. The literature fails to adequately address the possibility of partially mandated relationships.

2.6 The Mandated Relations Perspective

2.6.1 Introduction

Interorganisational relations from the mandated relations perspective is a much smaller field of study than the two dominant fields: the exchange perspective and resource-dependence perspective, however, it is treated separately in this review due to its relevance to this research. The mandated relations perspective examines the nature of the mandate and its affect on defining the interorganisational relationship and its operation.

The literature makes a distinction between mandated, voluntary and partially mandated relations. In each case, the strength of the mandate or lack of it are seen as crucial to the behaviour of the member organisations involved in the relationship.

Warren (1967), Turk (1970, 1973), Aldrich (1976), Hall, Clark, Giordano, Johnson and Van Roekel (1977), and Raelin (1980) examine interorganisational relations from a mandated perspective. Oliver took the definition of interorganisational relations to a more sophisticated level by arguing that the reasons for forming relations is fundamental to understanding the relationship. Raelin focused on the mandated basis of interorganisational relations and distinguished it from the exchange and resource-dependence perspectives. Turk, Aldrich, Galaskiewicz, and Schwochau, Feuille and Delaney explored the notion of mandated interorganisational relationships as a field of study in its own right.
2.6.2 Voluntary Relations

The basis of voluntary relations has been outlined above by the exchange perspective of Interorganisational Relations. In essence, organisations seek an adequate supply of money and authority to achieve their goals and objectives, maintain or improve their competitive position, and extend or defend the organisation's way of doing things. Underlying this concept is the notion of autonomy. Organisations would prefer to remain completely autonomous because they would then be free of the restrictions and constraints of needing to take others into account when they undertake actions or decisions. Ideally, most organisations would prefer to be left alone to go about their business as they wish. However, the reality is that few organisations can exist without depending on others to some degree. If interaction is necessary then, organisations would prefer to choose who they interact with and to what extent. They prefer to enter into those relationships which would best allow them to exploit the environment. They also seek those relations which will provide them with the necessary resources yet allow them to maintain maximum autonomy. Benson (1975) calls this relationship balance or equilibrium where there is domain consensus, ideological consensus, positive evaluations of the other organisations and good work coordination amongst them. It follows that if this balance is upset or the organisation feels that the costs of being involved in the relationship outweigh the benefits, then the organisation will wish to withdraw altogether or form new relations with an organisation(s) which promise more benefits than costs.

The importance of voluntary relationships is that the organisations involved are willing participants who perceive mutual benefits and believe that their relation will allow them to better achieve their goals than if they were entirely independent. It is important to note that these relations depend largely on goodwill and the acceptance by those involved that a participant in the relationship may withdraw at any time if it so desires.

The critical aspects of voluntary relationships are a high degree of autonomy for those involved, a very low modicum of permanence of the relationship, and the need for mutual benefit if the relation is to continue.

2.6.3 Mandated Relations

The underlying importance of mandated relations is the mandate itself. The strength of the mandate will determine the nature of the relations, the degree of autonomy of the participating organisations and the degree of permanence of the relation. Aldrich (1976), Hall, Clark, Giordano, Johnson and Van Roekel (1977), Schmidt and Kochan (1977), Raelin (1980), Galaskiewicz (1985) and Schwochau, Feuille and Delaney (1988) have explored interorganisational relations mandated by law.
Raelin distinguishes mandated relationships as a third basis of Interorganisational Relations; the other two being the voluntary or exchange interaction basis and the power-dependency approach where not all potential participant organisations are interested in interaction. Raelin suggests that under the mandated basis of interorganisational relations, "organisations are assembled into a network by a mandate in order to realise individual and mutual goals". The difference between this and the exchange perspective is that although the participants are expected to be willing participants, the motivation to interact is provided by the mandate rather than by the voluntary actions of the participants. It also differs from the power-dependency perspective because an element of mutual benefit is suggested by the mandate which reduces the overriding concern with power as the motivation for interaction.

Raelin suggests that "the source of the mandate distinguishes two types of networks: one created by formal agreement, the other externally imposed by law". From this distinction, he makes a critical point about the permanence of networks. He suggests that "in exchange networks, member organisations may choose to leave the network when their goals and interests are no longer mutual with that of the network. In power-dependency networks, an organisation may leave the network when it no longer is dependant on a parent or sponsor organisation. In mandated networks, the mandate itself assures a degree of permanence as one of its founding principles. Organisations remain in the network for a minimum duration due to managerial-contractual or legal-political obligations". However, this distinction does not take into account those networks which begin with a formal agreement between organisations and may be termed voluntary or exchange relationships and become mandated relations when bound by law in the form of legislation. This situation may be termed "partially mandated" relations. These relations pose particular difficulties for organisations which enter into a relation voluntarily and find themselves forced to remain in the relation due to it being bound by mandate.

Raelin identified five conceptual characteristics of legal-political networks based on empirical findings:

1. Network Distributional Balance: the most important characteristic of legal-political networks emanates from the basis of formation, the mandate itself. It refers to the actual distribution of the dimensions of influence and domain within the network as stipulated by the mandate. The most important aspect is influence which may be broken into two categories: power and authority.

2. Evaluation: the traits or attitudes of the participating organisations are important and are referred to as performance evaluation, linkage evaluation and leadership evaluation.

3. Competition and Conflict: whereas they are associated and perhaps even necessary to network development under exchange and resource-dependency bases, competition and conflict are dysfunctional in the mandated case. In legal-political networks, in particular, since the distribution of resources and influence is largely predetermined, competition and conflict constitute evidence that the mandate is not clear and binding or that it being expressly
4 Coordination: the mutual identification and or implementation of joint activities, is normally construed as a dependent variable in interorganisational analysis. In non-mandated networks, intensity or frequency of interaction is oftentimes the crucial dimension; in legal-political networks, it does not follow that more coordination is better coordination. Coordination among network members should correspond to task requisites or to functional inter-dependence between the organisations.

5 Effectiveness: the goal attainment model of effectiveness is not sufficient to adequately assess organisational effectiveness within a legal-political network. A two-level analysis is more appropriate - one at the operational level and the other at the mandate-control level.

The most important aspects of mandated relationships are a low to medium degree of autonomy for those involved, a medium modicum of permanence of the relationship and only a medium degree of need for mutual benefit if the relation is to continue.

The degree of autonomy of the member organisations will be determined by the mandate and by the way the network develops outside of the formal mandate. This will largely be determined by the performance of the coordinating agency in performing its mandated functions and in its efforts in addition to its mandate to perform on behalf of the network as a whole. While the nature of the mandate will influence the degree of member autonomy, the tensions between autonomy and joint action will be determined by the performance of the coordinating agency and the capacity of the member organisations to use power and force within the network. The permanence of the relation will be established by the mandate, however, the degree of permanence will be dramatically affected if the member organisations perceive the mandate allows them the possibility to withdraw from the network at some stage. The need for mutual benefit will always be present, however, there will be a stronger need for perceived benefit from members who feel they entered the relation voluntarily.

2.6.4 Partially Mandated Relations

The third major basis for interaction is the partially mandated relation. Hall, Clark, Giordano, Johnson and Van Roekel (1977) distinguished partially mandated relations as a separate basis of interaction. They suggest such interaction is voluntary but standardised through some form of formal agreement. Examples of this type of interaction include business organisations which develop relations when agreeing upon a contract, but formalise the relationship once the contract is signed by both parties. It is accepted that relationships of these sort are initiated by one or both parties voluntarily and the
organisations involved decide to formalise their relationship for mutual benefit. There is little force involved, however, the agreement makes the relationship more permanent than pure voluntary relations.

There has been little empirical investigation of partially mandated relations. Most theorists view relations as either voluntary or mandated. Research has been done on interlocking directorates Selznick (1949), Pfeffer (1972, 1973), Allen (1974), Pfeffer and Salancik (1978), Aldrich (1979) and Burt (1980) as strategies to coopt problematic elements of the environment. Hall et al viewed board interlocks as examples of voluntary exchange with formal agreement. However, the lack of research on causes and implications of partially mandated relations may be due to the notion that they represent a state of flux and are thus difficult to grasp.

Aldrich (1976) and Hall et al noted that networks are not static, rather, they are evolutionary. Relations that are voluntary in the beginning may become formalised when the participating organisations decide that there might be benefits in making the relationship formal or more permanent. Equally, the relationship may become even more formalised - by law - and evolve into a mandated relation if the organisations involved or powerful external forces decide that there are benefits in the relationship being enshrined in law.

The critical aspects of partially mandated relationships is a medium to high degree of autonomy for those involved, a low to medium modicum of permanence of the relationship and only medium to high degree of need for mutual benefit if the relation is to continue. Organisations involved in partially mandated relations are constrained by the mandate similar to those in mandated relations. However, the power of member organisations is greater when the mandate is only partial because there is not the overriding concern that the relation is fixed by law. While the distinction between mandated and partially mandated relations can become blurred when organisations involved in mandated relations see themselves as involved in partially mandated relations due to their degree of control within the network and their perception of voluntary interaction, the distinction is that those in partially mandated relations are less constrained by the relation and thus expect more from it. They expect more autonomy, less permanence and more benefits or reward.

2.6.5 Conclusion

The critical point about voluntary, mandated and partially mandated relations is that the distinctions between them appear to be crucial for the analysis of interactions among organisations and in the behaviour of organisations involved in the relation. The distinction between the three types of interaction suggests that there will be differences in the nature of the relation involved in three important dimensions: autonomy of member organisations, degree of permanence in the relationship,
and the necessity for mutual benefit. These dimensions will vary in each form of interaction.

It is clear that there needs to be further empirical research into the causes and implications of partially mandated relations. Little work has been done on the behaviour of organisations who enter into a relationship voluntarily and then feel trapped by its formal agreement. Similarly, research needs to be done on organisations who feel they enter into a mandated relation voluntarily or who begin a mandated relation with a formal agreement which then becomes the basis of a mandate and the organisation comes to feel restricted by the mandate. This research will consider some of these issues.

2.7 Other Dimensions of Interorganisational Relations

2.7.1 Introduction

There are a number of themes within the literature which have not yet been discussed by this review and are relevant to the study. They include interorganisational conflict, interorganisational coordination; collaboration and cooperation; boundary spanning and interorganisational effectiveness.

2.7.2 Interorganisational Conflict

The literature on interorganisational conflict may be divided into two sections: that which aims to determine the nature of conflict: Schmidt and Kochan (1972), Turk (1973), Kochan, Huber and Cummings (1975), Molnar and Rogers (1979), Astley and Sachdeva (1984) and that which attempts to resolve or manage the conflict Litwak and Hylton (1961), Warren (1967), Assael (1969) and Alter (1990).

There are three important concepts which emerge consistently in the literature. The first is that interorganisational conflict is normal organisational behaviour and almost an unavoidable process: Assael (1969), Sebring (1985), and Turk (1973). The second is that power is the critical factor when exploring interorganisational conflict: Dill (1962), Warren (1967), Aldrich (1971), Tushman (1977), Salancik and Pfeffer (1978), Astley and Sachdeva (1984). The third is that organisations should not necessarily seek to remove interorganisational conflict but should seek to manage and control it at a
level which is not dysfunctional: Litwak and Hylton (1961), Alter (1990).

Theorists have often presented conflict and coordination as the extremes of a single interorganisational dimension, the two ends of a continuum describing relationships within and between organisations. However, the two terms describe two separate and different dynamics that are not mutually exclusive but that occur simultaneously within interorganisational relationships. This research supports the argument that conflict is normal. Conflict occurs between individuals and organisations as organisations within a collective strive to maximise their control over their dependency on the collective. It is normal organisational behaviour for organisations to engage in conflict when resources are concerned. The existence of conflict becomes even more accepted as normal behaviour when scarce resources are involved. The conflict between network members within a federated network structure is to be expected and should be accepted as quite normal organisational behaviour. Conflict between the members should be seen as a simple property of work processes, one that is legitimate and necessary. However, the network must establish management processes which monitor the level of interorganisational conflict so that it does not become dysfunctional. Excessive levels of interorganisational conflict within a federated network structure can lead to a dysfunctional political economy and, ultimately, withdrawal from the network.

### 2.7.3 Coordination, Collaboration and Cooperation

The focus of the literature on improving interorganisational relations is on coordination and how to coordinate relations between organisations. In his review of the field of Interorganisational Relations, Whetten (1981) focused on coordination because of its "practical significance." Whetten suggests that perhaps the most common research question asked by interorganisational relations theorists has been, "How can we improve coordination between interdependent organisations?". There have been a number of empirical studies which focused on this question: Litwak and Hylton (1962), Aiken, Hage and Marrett (1971), Litwak and Meyer (1974), Schermerhorn (1975), Gray (1985, 1989). These researchers have documented coordination programs and identified several coordinating structures and prescriptive models. Gray has explored collaboration as an extension of cooperation. Whetten suggests that "although a great deal of interorganisational relations research has been descriptive, a large segment of it has been explicitly prescriptive in that it has sought ways to improve interorganisational coordination". He organises the literature's investigation of interorganisational coordination into four categories: structural forms of coordination, antecedents of coordination, a model for improving coordination and the unintended side effects of coordination. Two important theoretical frameworks need to be added to this list: the role of boundary spanners and the role of the coordinating agent in facilitating relations between network members.

Coordination, cooperation and collaboration are the literature's main suggestions for improving
interorganisational relationships. Theorists have developed models and management processes to use as frameworks for introducing cooperation and collaboration within interorganisational relationships. The weakness in the literature is that there have been few empirical investigations of the performance of these cooperative models. It is not yet known whether the literature’s frameworks to introduce coordination, cooperation and collaboration can improve deteriorating interorganisational relationships. There needs to be further research into the performance of these frameworks when faced with deteriorating relations, particularly when the interorganisational conflict involves a very strong political economy within a federated network structure.

2.7.4 Boundary Spanners

There have been a number of studies which have confirmed the importance of boundary spanning roles to link organisations: Wren (1967), Allen and Cohen (1969), Whitley and Frost (1973), Keller and Holland (1975), Kochan (1975), Aldrich and Herker (1977), Spekman (1979), and Fennell and Alexander (1987). The literature suggests that these roles are vital to the effective monitoring of the environment and to the transfer of technology and information across organisational boundaries.

The importance of boundary spanning in enabling organisations to interact with their environment is clear. However, the distinction between formally designated boundary spanners and boundary spanning as part of the duties of senior staff has not been made clear. It is reasonable to assume that boundary spanning should be part of the role of any organisation’s senior staff. Some senior managers might view facilitating the flow of information into and out of their organisation, protecting their organisation from the environment, and building bridges or links with other organisations "simply part of the job". From this perspective, boundary spanning is normal organisational behaviour. The need for staff to be placed in boundary spanning roles then becomes unnecessary and organisations who do so may be criticised as overly bureaucratic and wasting resources on "professional communicators." Further empirical investigation needs to be done on the need for boundary spanning as an isolated role within organisations compared to boundary spanning activity included in the functions of senior managers.

In addition, there is not yet any empirical evidence to indicate whether boundary spanners can improve deteriorating interorganisational relationships.
2.7.5 The Central Coordinating Agency

Litwak and Hylton (1962), Whetten (1981) and Stern (1981) explored the role of the central coordinating agency in facilitating relations within a network. The agency is the single structural component which distinguishes the federated network structure from the network members existing as separate organisations. It is designed to coordinate and facilitate the network's interorganisational activity so that the members achieve more from being a part of the network than they could as independent organisations. Its performance is critical to the operation, performance and permanency of the network.

The most important failure of the literature in terms of the role of the central coordinating agency is the need to address the problem of what to do when the control agent is the primary source of conflict. The literature suggests the coordinating agency has an important role in the coordination, cooperation and collaboration within a network. However, this fails when the coordinating agency is seen by the members as a cause of conflict. This might occur when the members are not satisfied with the task performance of the coordinating agency, the members feel the material cost of establishing and operating the coordinating agency has not been offset by the benefits it provides, or the members resist the control of the coordinating agency and there is a battle for control of the network between the members and the coordinating agency.

2.7.6 Interorganisational Effectiveness

It is generally agreed by theorists that the effectiveness of interorganisational relationships are difficult to measure. Yuchtman and Seashore (1967), Hage (1974), Van de Ven (1976), Raelin (1980), and Dalton, Todor, Spendolini, Fielding and Porter (1980) have investigated interorganisational effectiveness.

Perhaps the best means of assessing the effective of interorganisational relationships is to determine whether it has met the needs and expectations of those involved. Organisations enter into relationships with other organisations in order to attain goals that are unachievable if they remained independent. If an organisation forms a relationship with another it results in immediate loss; in terms of lost autonomy and the need to invest time and energy to develop and maintain the relationship. In order to compensate for its loss, the organisation will expect benefits or rewards from the relationship. Whether in the form of reduced environmental uncertainty or resources, the organisation will expect the relationship to produce more than it costs. If the benefits do not outweigh the costs, the organisation is likely to want to withdraw from the relationship. The argument applies equally to voluntary, mandated and partially mandated relations. Even in mandated relations, if the benefits do
not outweigh the costs the organisation is likely to resist the mandate and the relationship is likely to become dysfunctional. The literature has not adequately covered the behaviour of organisations faced with a feeling that there are more costs than benefits in their interorganisational relationships. Van De Ven's work is the most useful theoretical framework, however, it is clear that the link between benefit and cost from the perception of organisations involved in interorganisational relationships should be the subject of further empirical investigation.

Concluding Remarks

The Interorganisational Relations literature has evolved from its beginnings in the early 1960's when theorists first began to grapple with organisations as part of open systems, to progressively sophisticated definitions of interorganisational exchange, to the more complex theories of the political nature of resource dependency. Much of the early literature was concerned with defining terms and clarifying theoretical constructs. The literature then moved to developing its analytical tools and research methods. Once this framework was in place, theorists then focussed on using these tools and methods by researching the nature of coordination, cooperation and collaboration and how to improve relations between organisations.

However, the most interesting and challenging area of the literature, the political theories which evolved from the resource dependence perspective, is still at an embryonic stage. Perhaps the most pointed lesson to be learned from Interorganisational Relations is that organisations do not always decide to form a relationship voluntarily. However, whether the reasons for joining are voluntary, mandated or partially mandated the relationship will involve underlying forces and tensions which will often determine the nature of the relationship. These forces will largely involve the pursuit of funds and autonomy and how organisations pursue these resources within their interorganisational relationships will determine three key issues:

* the nature of the relationship.
* the degree of permanence of the relationship.
* the perceived benefits or rewards of the relationship.

The exchange perspective tells us that organisations interact in order to gain mutual benefit. The resource dependence perspective explains how they seek these benefits once in the relationship. The mandated relations perspective explains how the reasons for joining the relationship will affect the relationship in terms of the autonomy of participating organisations, the degree of permanence of the relationship and the need for mutual benefit.
This research will adopt a number of theoretical frameworks drawn from the literature in order to analyse the network universities' federated network structures. These will include Stern's framework: specifying the environmental context, interaction processes, historical development and specific structures of the network; not just its structural or functional measures, Benson's model of the political economy; Whetten's model of coordination and Gray's model of collaboration.
CHAPTER THREE: RESEARCH METHODOLOGY AND DESIGN

3.1 Introduction

This chapter describes the research methodology and design. It is organised into three sections. The first presents the research design. The second presents the research methodology. The third presents the analytical methods employed in the research.

The general research problem is to examine whether the interorganisational relationships within federated network structures; more specifically between the member organisations and between the members and the central coordinating agency, may be explained by the pursuit of funds (money) and authority (autonomy). The specific research questions which are the focus of this research are:

The first sub problem: is to determine the nature of the federated network structures at each of Australia's three network universities and how they operate.

The second sub problem: is to determine the nature of the interorganisational relationships within the federated network structures at each of Australia's three network universities; more specifically between the members and the central coordinating agency and between the members themselves.

The third sub problem: is to review the performance of the federated network structures at each of Australia's three network universities in terms of their efficiency, effectiveness and from an interorganisational relations perspective.

The fourth sub problem: is to prescribe a future direction for improving interorganisational relationships within the federated network structures at each of Australia's three network universities.

In addition, the research aims to explore a number of weaknesses within the literature identified by the literature review.

In order to properly examine these issues, the research has developed a comprehensive framework for the analysis of interorganisational relationships within federated network structures. The framework was outlined in chapter one. The research adopts a comparative case study methodology in order to present its main research findings.

The research's main findings are presented in chapters five, six and seven. They examine the general
research problem and the first three sub-problems. Each chapter follows the same research methodology:

a) Each section is introduced with an overview of the relevant literature. This presents a theoretical framework for the analysis which follows and highlights weaknesses within the literature which will be investigated by the research.

b) Where relevant, a proposition(s) drawn from the literature is proposed for testing by the research.

c) The research data is analysed, compared and contrasted using theoretical frameworks derived from the literature.

d) Conclusions are drawn. The conclusion includes a summary of the research findings, the testing of the proposition(s) where relevant, and the exploration of the weaknesses within the literature where relevant.

The research's fourth sub-problem is examined in chapter eight.

The research also includes a literature review and an analysis of Australia's higher education environment during the period 1988 to 1993.

3.2 Research Design

There were several factors which were important in designing this research. The most important factor was to determine an appropriate qualitative research methodology in order to properly analyse the research's qualitative data. The research adopted a comparative case study research design.

The research's core data is the qualitative material used in chapters five, six and seven. It is based upon in-depth face to face interviews (lasting between one and two hours) with the sixty-three most senior staff at the University of Western Sydney, and the five most senior staff at both Charles Sturt University and the University of New England; media reports; policy papers and government reports; newsletters; ad hoc surveys undertaken by staff and unions; University manuals, annual reports, and position papers; legislation and Hansard reports of parliamentary debates. In addition, the research examined NSW Parliamentary Library newspaper files on higher education in the period 1988 to 1993. It also includes a comprehensive literature review.
Spector (1981) describes a scientific investigation or study as being undertaken to:

"...answer some specific question of hypotheses concerning the behaviour of animals, humans, or social systems".

This research has a number of research questions and propositions designed to explore the interorganisational relationships within Australia's federated network structures. Spector states that the research must adopt a scientific method which is designed to minimise the biases that affect subjective opinion. This research uses a case study approach for its qualitative analysis in order to fulfil the criteria of scientific method.

This research followed Yin's (1985) guidelines in selecting its research design. Full details were provided in chapter one. As a result, the case study approach was selected for the research's qualitative analysis.

3.3 Research Methodology

3.3.1 Introduction

This section describes and explains the research methodology adopted by this research.

The research recognises Stern's (1980) proposition that network activity is a function of the historical development of relationships as well as current structural characteristics, and, second, that the explanatory power of the network approach depends on an analysis of the processes that link network structure to the interests of organisations in the network. It also accepts Whetten's (1979) proposition that an adequate assessment of federated network structures must take into account the historical development of the network in addition to the existing structural characteristics and it must take into account the motivations for joining the network and the perceived benefits the network provides for members.

With these theoretical frameworks in mind, the research aims to present a historical context of the interorganisational relationships within the federated network structures under review, an analysis of the networks in operation, and a review of the networks' performance. This analysis is supplemented by an environmental context provided by a review of the subject organisations' industry in the period under review (ie. 1988 to 1993). The research concludes with suggestions and recommendations for improving interorganisational relationships within federated network structures based upon the research findings.
A major component of the research methodology used by this research was the gathering of the research data. A total of seventy-three in-depth face to face interviews were held with very senior staff at the subject organisations located throughout New South Wales. The research gathered a wide variety and large volume of both qualitative and quantitative research data including University reports, letters, policy papers, and other documents; newspaper reports; legislative debate; and surveys undertaken by University staff. The research also used data provided by the Department of Employment, Education and Training (DEET) and the Graduate Careers Council of Australia (GCCA). The richness of the data gathered made it difficult to constrain the size and scope of the research.

3.3.2 Review of the Literature

The first step in this research was to undertake a comprehensive review of the literature. The results of this review are presented in chapter two. The aim of the review was to gain an understanding of Interorganisational Relations and then to focus on those areas which were particularly relevant to the study:

- Definitions of Interorganisational Relations
- Networks
- The Exchange Perspective
- The Resource Dependency Perspective
- Mandated Relations
- Other Dimensions

The literature review aimed to:

- Develop a theoretical framework from which actions, recommendations and conclusions could be drawn.

- Provide a contribution to the understanding of federated network organisations and, in particular, the interorganisational relationships within networks.

- Develop a synthesis of ideas which could be used to analyse the research's qualitative data.

The review provided a theoretical framework from which to undertake the main body of the research and identified weaknesses within the literature which will be explored by the research. It also provided
a basis for the development of theoretical propositions which will be tested by this research.

3.3.3 Environmental Context

The research's environmental context is presented in chapter four. It analyses the key issues which affected Australia's higher education sector during the period under review (ie. 1988 to 1993). This environmental analysis is particularly important in the context of this research because Interorganisational Relations is specifically concerned with how organisations interact with their environment and the impact of the environment on their operations. The data presented in chapter four was gathered by the following research:

* A day spent in the New South Wales State Parliamentary Library researching and photocopying all material relevant to this research. Every media article on higher education from 1 January 1988 to June 1993 was photocopied, and later analysed and summarised. The legislation which created each of the federated network universities and the relevant Hansard copies of the parliamentary debate were photocopied, and later analysed and summarised. Several policy papers and government reports were also copied.

* A literature review of studies of Australia's higher education system, particularly that of Professor Grant Harman of the University of New England.

* Work completed by the researcher as part of his role at UWS, Macarthur which included environmental audits, newsletters and information papers on major policy issues in higher education.

* Telephone discussions with staff at each of the network universities about their university.

* Newsletters, staff surveys, policy papers and other material forwarded by staff at each of the network universities on the federated network structure.

This information was used to develop a summary of the major issues which confronted Australian higher education in the period 1988 to 1993.
3.3.4 Survey Research

A survey was conducted in order to provide quantitative data to supplement the main research findings. It was decided to survey staff at one of the subject organisations: the University of Western Sydney. Cost and logistics made it impossible to survey staff at each of the subject organisations. The best means of gathering quantitative data about senior staff perceptions of the University of Western Sydney's federated network structure was to interview the University's most senior staff. In addition, five interviews were held with very senior staff at both the University of New England and Charles Sturt University. It was felt that arranging personal interviews would lead to a far better response rate than mailed questionnaires and better quality information. The interviews were based on a structured questionnaire and each respondent was asked the same questions. The author of this research interviewed each respondent personally. The face to face nature of the interviews often became in-depth discussions which produced more comment and covered more issues than the questionnaire intended. In this sense, the interviews produced substantial qualitative data and the results were used for the analyses in chapters five, six, seven, eight and nine.

The quantitative analysis produced by this survey research was not included in the main research findings because it was decided that the analysis did not enhance the overall presentation of the findings. However, the quantitative analysis provided insights and support which were used in the qualitative analysis.

3.3.5 Qualitative Research

The qualitative research is based upon the case study research design. This research combined Yin's two general strategies for analysing its case study data: a) relying upon theoretical propositions and b) developing a case study description. Full details of the qualitative research methodology are outlined in chapter one. The results of the qualitative research are presented in chapters two, four, five, six, and seven.

3.4 Analytical Methods Employed in this Research

This section provides an overview of the analytical methods adopted by the research.
The research used qualitative research methods. The qualitative research analysed the survey raw data and other qualitative data using Yin's case study research methods.

3.4.1 Units of Analysis

The unit of analysis used by this research was at the organisational level: the University of Western Sydney as a whole, Charles Sturt University as a whole, and the University of New England as a whole.

3.4.2 Qualitative Research Techniques

The qualitative analysis is based upon the comparative case study research design. Full details are provided in chapter one. In essence, the research gathered data relevant to the general research problem and the four sub-problems; analysed, compared and contrasted the data using theoretical frameworks derived from the literature; and drew conclusions based upon the research findings, the testing of theoretical propositions found within the literature, and the exploration of weaknesses within the literature.

The research's fundamental qualitative research method was Yin's pattern-matching mode where the empirically based pattern provided by the research findings were compared and contrasted with the predicted pattern provided by the literature's frameworks. Yin suggests if the patterns coincide, the result can help a case study to strengthen its internal validity.

The research tested a number of theoretical constructs drawn from the literature about how organisations will behave in interorganisational relationships within federated network structures. The constructs are presented in chapters five, six, and seven in the form of propositions.

The research may have benefited from using grounded theory. Grounded theory is a research strategy developed in sociology, but applicable in many fields, whose purpose is the generation of conceptually abstract theory from data (usually qualitative data). To implement this purpose, it provides a set of tools, techniques and procedures which emphasise analysis rather than description. Its tools and procedures allow researchers to develop abstract conceptual categories grounded in the data. While the case study approach was selected for this research, it is accepted that grounded theory may have enhanced some aspects of the study. The development of the following conceptually abstract theory by this research illustrates the results of grounded theory:

* the three versions of the federated network mode: the network member autonomy model, the federative model, and the centralised model.
* the degrees of strength of the political economy from strong, moderate to weak.
CHAPTER FOUR: AUSTRALIA'S HIGHER EDUCATION ENVIRONMENT 1988 to 1993

4.1 Introduction

Interorganisational Relations is concerned with how organisations interact with other organisations within their environment. This research examines the performance of three Australian universities in the period from 1988 to 1993. This chapter presents a qualitative analysis of Australia's higher education environment during that period. In doing so, it provides a context for the research by analysing the key issues which affected the performance of the three network universities during the period under review. It also provides an appropriate background for the research by highlighting the history leading to the creation of the three network universities and the Federal Government's objectives in creating them.

This chapter presents a summary of the findings of a review of Australia's higher education environment in the period 1988 to 1993. The full environmental review is included in volume 2.

The reforms introduced by the then Federal Minister for Employment, Education and Training, the Hon John Dawkins in Green (1987) and White Papers (1988) represented some of the most significant changes in the history of Australia's higher education system. The Dawkins reforms completely restructured the higher education system replacing the binary system, comprising universities and colleges of advanced education, with the unified national system, comprising universities only. The reforms had wide-ranging implications for staff, students, the community, business and industry, and even Australia's economic performance. The reforms transformed Australia's higher education, led to many new universities, new university structures, and ultimately to questions of quality and the performance of Australia's universities.

4.2 The Dawkins Reforms

4.2.1 The Green Paper

In 1988 at a conference held to discuss the implications of the Green Paper, Dawkins said:

"...the Green Paper proposed to give higher education a greater role in the process of economic
development and adjustment...this would be due to sustained growth in student numbers, and measures to strengthen institutions, and to make them more responsive...all governments are increasingly required to scrutinize and justify every area of public expenditure...governments have a legitimate role in ensuring that broad national priorities are reflected in the activities of higher education institutions...institutions cannot expect Government to merely act as banker and post office".

Dawkins' key points were that higher education institutions should play a greater role in Australia's economic recovery; the Government had a right and responsibility to involve itself in the higher education system; and in return, the Federal Government would provide increased funding to support growth. The response to the Green Paper was generally cautious. Most observers understood that the crucial statements would be made in the White Paper.

4.2.2 The White Paper

The White Paper was fundamentally concerned with the assumption that there was a positive relationship between institutional size, effectiveness and efficiency.

While institutional size was the dominant theme of the White Paper, the policy statement contained wide-ranging reforms. However, the essence of the White Paper is a simple notion. Its underlying rationale was that a smaller number of larger institutions would result in a more efficient and effective higher education system. The assumption was that larger institutions would be more likely to generate economies of scale. This was considered by the Federal Government to be particularly true of smaller institutions. It was felt that merging smaller institutions with larger ones, or merging two or more smaller ones together, would result in economies of scale through sharing common administrative and, in some cases, academic functions. This would result in cost savings and remove duplication. Larger institutions would also be more responsive to change and able to adapt to the need to contribute to Australia's economic recovery. By increasing output and providing a wider range of courses, Australia's higher education system would help the nation move out of recession.

The importance placed on the White Paper was illustrated by its opening statement which suggested "it marks a new era of growth and opportunity for our higher education institutions, with potentially significant benefits for all Australians". The point was further emphasised by arguing that the community demanded a major expansion of higher education:

"...both the levels of student demand for higher education and the range of pressures - cultural, social, and economic - for an increased national investment in education (and) the need for a better educated and more highly skilled population (has been) clearly recognised and widely accepted".

The White Paper concluded its opening address by stating that its far-reaching reforms would benefit
the community generally. As with most astute political statements, the White Paper claimed it was responding to perceived community need. It suggested that "our higher education institutions should not be isolated from the major changes occurring in Australian society and the economy. Rather, they should be one of the prime agents in the process of change." The Federal Government was suggesting that higher education institutions were not doing their part to improve Australia's difficult economic situation, that the public wanted higher education institutions to improve their performance, and that the White Paper presented them with the reforms necessary to achieve improved performance.

The White Paper stated that the way to improve the performance of our universities and refocus their activities in areas of "relevance to the national goals of industrial development and economic restructuring" was to expand the system and provide greater equity of access. It proposed to increase the annual output of graduates from 88,000 to about 125,000 by 2000. In support of the argument for growth, the White Paper cited "widespread agreement that further substantial growth is both necessary and desirable" and offered unmet demand, demographic pressures, trends in school retention, adult training and retraining, and graduation rates as arguments in support of growth. The major growth areas would be in "vocational" fields such as engineering, science and technology, and business and management. The Paper noted that "efficiency gains in the higher education system are possible" but that further growth would require substantial additional resources.

The framework for achieving improved performance through growth was the Unified National System (UNS). The UNS would have "fewer and larger institutions than at present". While introducing the possibility for amalgamations, the Federal Government also ensured that it would retain control:

"...the system will consist of a range of higher education institutions with specific missions agreed with, and funded by, the Commonwealth".

The Government control of the system was emphasised with the introduction of educational profiles which were to be an agreement between the Federal Government and the individual institution and "the principal means for defining the role of the institution and the basis on which it receives Commonwealth funding".

This statement indicated that Government would use its funding power to allow it to ensure its educational and economic objectives were being achieved by the higher education system.

In setting parameters for membership of the UNS, the Federal Government introduced the key concept of size:

"...size is not an end in itself; rather, in most cases, it is a necessary condition for educational effectiveness and financial efficiency".
The implied association between size, efficiency and effectiveness was explored further in the White Paper’s section on institutional structures. The Federal Government’s educational objectives were for institutions to produce educational benefits and cost efficiencies. The Government indicated that the means to achieve this objective was through “consolidations” which would “overcome any inefficiencies which may exist”.

The educational advantages of consolidations were listed as:

* greater breadth and depth of course offerings available to students.
* advantages to staff in the form of wider options for career advancement and teaching/research arrangements.
* economies in administration and other overheads, including, in some instances, capital costs.
* a stronger foundation for growth in the institution, together with additional opportunities for Commonwealth financial support.

The Paper also suggested consolidations would provide an important source of greater equity in the system by allowing a broader range of entry options.

The educational advantages also included addressing institutional inefficiencies. The White Paper acknowledged that the question of appropriate size is not easily resolved. It suggested that a “measure of average cost per EFTSU has superficial attractions as an indicator of cost efficiency, but is heavily influenced by an institution’s discipline mix”. However, the Paper suggested that administrative costs should not vary significantly with the mix of disciplines and “there is evidence that institutions with fewer than 2,000 EFTSU spend a significantly greater proportion of their budgets on administration and related costs than those with higher student loads”.

The Federal Government’s solution to these alleged inefficiencies was to dissolve those institutions with less than 2,000 EFTSU and encourage other smaller institutions to seek consolidation with larger institutions. This was done through a subtle blend of political power based upon the threat of withdrawing funding support.

The Federal Government made it clear that it would support only those institutions which joined the unified national system (UNS) and eligibility for the UNS was based on size criteria:

“Commonwealth support for growth and reform in higher education will focus on those institutions which make up the unified national system in higher education. This system will consist of higher education institutions with specific missions agreed with, and funded by, the Commonwealth.”

This point is further illustrated:

“To be an eligible member of the unified national system, institutions must have a minimum sustainable
A student load of 2,000 EFTSU (is) the minimum load for an institution to qualify for membership of the unified national system;...a load of 5,000 EFTSU (will) justify a broad teaching profile and some specialised research activity; and a load of 8,000 EFTSU (is) the base for a relatively comprehensive involvement in teaching and research.*

University status prefaced a desire to establish a research profile. It is a long held tradition that "true" universities are involved in both teaching and research activities. Furthermore, it is widely recognised that research activities largely determine a university's national and international presence within the higher education sector and all institutions desire a reputation for quality research. With this in mind, it is reasonable to assume that if size was the key determinant of Commonwealth support and capacity to undertake research activities; institutions were left with little choice but to amalgamate with others in order to meet the size criteria.

The White Paper's threatening overtones were reinforced by the following statement:

"...the Government encourages institutions with a student load in the 2,000 - 5,000 EFTSU range and with little prospect of substantial future growth to give serious consideration to their future as independent institutions".

The White Paper alluded to what were to become federated network universities when it said:

"The Government is aware that some mergers are likely to involve the establishment of multi-campus institutions with widely dispersed sites. It is accepted that mergers of this kind do not immediately provide economies of scale. Nonetheless, the substantial educational benefits available to the institution will ultimately make it more effective than a group of smaller independent institutions".

The White Paper concluded with a section on organisational effectiveness. It indicated that effective management at the institutional level would be the key to achieving many of the Government's objectives for the UNS. It stated:

"The Government's aim is to enhance the autonomy and capacity of institutions to direct their resources flexibly and effectively to meet their designated goals...As autonomy increases, however, so the need for accountability grows".
However, many observers felt that accountability grew but autonomy decreased. The White Paper was the culmination of the Federal Government's aim to control the higher education system. It was a political directive more than a policy statement. Its ramifications were to be felt for years to come.

In an interview held on 12 September, 1993 in his new role as Treasurer, Dawkins reflected on his reforms.

"I sometimes wonder what would have happened if we had done nothing...a lot of the criticisms assume that things would have been better had things remained the way they were. I think people quite frequently forget the great problems that were confronting the system at the time...There was a problem of how to move from a situation where half the system was fairly tightly planned and the other half was sort of loosely planned. I think the binary system was an impediment and once you did away with the binary system what was the particular case for each individual institution staying as it was? ...the system has now grown about 200,000 extra students and that means a huge number of additional staff but a smaller number of institutions broadly having a greater say over what they do". (He was then asked why he had go wanted rapid change) "I had thought about it for a while. I abolished the CTEC because it was actually a barrier to significant change. CTEC had a considerable amount of power and whoever was the Chairman of CTEC was essentially the Minister for higher education. I thought that if the Government had views about what it wanted to do and wanted to commit huge additional resources to the system, then I thought it needed to have its hands more closely on the action...I knew there was no way that the Cabinet was going to support more funds without some sort of inefficiencies being dealt with...I don’t think there were huge inefficiencies...I think the value for money thing is a better expression...there was money saved from amalgamations...but mergers were never central to my objectives. The amalgamation process happened because the institutions wanted it to happen. The only pressures we actually applied to the amalgamation process was in relation to the places which had adjacent campuses and those which were very, very small...we required them to amalgamate". (He said he was surprised by the way he was portrayed as interfering with the system. He said "purse strings could not be used to regulate or control academic autonomy"). "What we were really trying to do was to create a new kind of distinctively Australian university which covered a wider range of courses across a wider range of awards...I set out to...improve their (universities) capacity to fulfil their role in life".

Dawkins' comments reveal that his reforms were based upon the following perceptions:

a) the binary system was not effectively addressing Australia's higher education needs;
b) there were differences in the level of Federal Government control (tightly or loosely planned) over the university sector and the college sector;
c) the success of the unified national system could be measured in terms of growth in student numbers;
d) the Federal Government wanted to increase its control of the higher education system;
e) there were inefficiencies in Australia's higher education system and the Federal Government wanted increased output for its funds;

f) widespread amalgamations were not a direct objective of the reforms but more an outcome of the reform package;

g) the Federal Government was not trying to regulate Australia's higher education system but was simply trying to improve the effectiveness of higher education institutions.

When analysing the Dawkins White Paper reforms, there are two major questions which might be considered:

a) Should the Federal Government be more concerned with the educational, rather than economic advantages of higher education institutions? And, if so, is the real question whether larger institutions provide educational, rather than economic, advantages?

b) Are there economic advantages in larger institutions? And, if so, should higher education institutions be concerned with both efficiency and effectiveness or just effectiveness?

These questions will be explored in the context of the three most important issues to arise out of the Dawkins reforms:

1. What were the Federal Government's economic objectives for the higher education system? And were they feasible?
2. What were the Federal Government's educational objectives for the higher education system? And were they feasible?
3. What is the nature of the relationship between the Federal Government and the higher education system? Is it effective or detrimental?

These three issues dominated Australia higher education in the period 1988 to 1993 and each influenced the performance of Australia's federated network universities during that period.

4.2.3 The Federal Government's Economic Objectives

The Federal Government's economic objectives were based on the belief that improved performance from Australia's higher education system would help improve the nation's economic performance. In his address to a conference on his Green Paper, Mr Dawkins suggested that "it hardly seems necessary to make the point that while a broadly based, well developed system of higher education can contribute to economic growth, its very existence is contingent on the growth and strength of the economy". Dawkins felt that Australia's universities should contribute more to improving the nation's economic problems.
The Federal Labor Government was committed to the economic restructuring of Australian society, which involved the further rationalisation of higher education and the linking of higher education goals more firmly to economic ends. The Green and White Paper proposals were made in the context of rising community expectations for greater access to higher education and for higher education to have more economic relevance.

The access and equity policy had a loose association with the Government's economic objectives. It was felt that more students and, in turn, more graduates, would assist the nation's economic recovery. But the more important objective was for higher education institutions themselves to improve their performance in order to assist the Federal Government's economic restructuring.

Dawkins had stated that Australia's universities should do more to assist the nation's process of economic adjustment. This school of thought felt that there was a direct relationship between higher education and economic recovery. It was implied that the economic prosperity of such countries as Japan and the United States was a direct result of their high participation rates in higher education; and more specifically, their number of graduates in engineering and the technologies. However, there is no evidence to suggest whether the high participation rates have caused economic prosperity or whether they are the result of economic prosperity.

Some theorists have argued that while the link between higher education and national economic performance was a common perception, there was no real evidence to support the association. The strength of the perception was illustrated by a Daily Telegraph newspaper editorial on 27 July, 1988 which captured public thinking at that time. It suggested:

"The White Paper provides a blueprint for injecting new life into our universities and colleges. It puts pressure on the institutions to cut down waste and become more relevant to national life. The White Paper clearly states the Government's belief that fewer and larger institutions will result in students having a wider range of subject choices at individual institutions while offering better services and enhanced teaching and research flexibility".

The Sydney Morning Herald newspaper editorial on the same day spoke of the "Federal Government's aim of improving overall efficiency and access to higher education, while harnessing the system to national economic goals". The Australian newspaper's comment also on the same day focussed more on the expansion of higher education places which it said was in response to "substantial pressures on the system". The Australian said "the Government's reforms will provide the basis for a significant expansion of higher education opportunities and greater equity of access". These comments all implied that Australia's higher education institutions were not meeting the nation's needs.

opened his address by stating that Australia faced a major process of structural change. He acknowledged that there was controversy over the contribution of education and training to economic growth, and its measurement:

"The early optimism of the "Human Capital" theorists gave way to scepticism and disillusion as the massive increases in educational expenditures during the 1960s and early 1970s were followed by the sluggish economic growth rates of the later 1970s and early 1980s. In this climate of disappointed expectations, it is not surprising that the political priority afforded to education in many countries suffered a widespread decline".

These comments indicate that Dawkins was at least aware of the arguments for and against the association between education and the economy. However, his next statement explains why he dismissed these arguments and decided to continue with the belief that education was directly linked with economic performance:

"More recently, however, there has been a renewed interest in the contribution of education and human skills to national economic performance. The setting for this renewal has been a heightened recognition of the limits of macro-economic policies to deal with the economic problems still facing the countries of the OECD".

The failure of macro-economic policies led Dawkins to suggest that the focus of policy attention should shift to micro-economic policies, and that the need for micro-economic reform was nowhere more evident than in Australia. Dawkins outlined how in 1985 he, as the then Minister for Trade and Resources, took a number of measures to set the appropriate macro-economic environment for structural adjustment such as deregulation of the financial market and fiscal restraint. Dawkins explained that the Federal Government embarked on a program of micro-economic reform as an essential complement to its macro-economic policies. The Government felt it was necessary to make both the public and private sectors more responsive and competitive. In order to do this, it was necessary to have a highly skilled workforce and "to achieve a workforce of this calibre will require a more efficient and responsive education and training system which is more closely attuned to the needs of industry".

Dawkins again accepted that it is difficult to prove the association between education and the economy:

"We recognise...that the relationship between economic performance and human capital investment can never be measured with any precision".

However, he indicated the relationship would still be pursued by the Australian Federal Government. The reason for this principally lay in the fact that the world's most successful economies had given education and skills development a high priority as factors in their economic success. He concluded
his address by suggesting the Conference was not concerned with whether education and training are factors in economic growth and performance, but on what needs to be done to improve their provision. This indicates how strongly Dawkins felt about the relationship between education and the economy.

Dawkins' career progression in 1993 to the position of Treasurer within Prime Minister Keating's Government supports the notion that he was someone who viewed performance as an economist. He was concerned over Australia's economic performance and felt that the institutions under his Ministerial control, higher education institutions, should do something about improving the situation. However, Dawkins failed to set the parameters for improved performance. He alluded to inefficiencies in the system but did not identify them. He wanted a more flexible and adaptable system but did not set performance targets or other measures of performance. He hoped that more students and more graduates combined with structural reform would remove these inefficiencies and enable higher education to contribute to the nation's economic recovery but he could not prove this would happen. Neither Dawkins, nor his supporters, nor his detractors, knew with any certainty what the results of the White Paper reforms would be. It was only in 1991, three years later, that the Federal Government realised it needed to change its higher education policy direction and introduced a "Quality and Diversity" policy to replace the Access and Equity policy. The Quality policy focussed on the need to consider the quality rather than the sheer quantity of the output of Australia's higher education system and it exposed weaknesses in the White Paper's reforms by questioning the quality of the UNS's output.

4.2.4 The Federal Government's Educational Objectives

The Federal Government's educational objectives were based on the perceived need to improve the efficiency and effectiveness of Australia's higher education institutions. It was felt that universities could:

a) improve their effectiveness by focussing their activities on their particular strengths, particularly in terms of Australia's need for "economically relevant" higher education; and

b) improve their efficiency through improved institutional management, particularly in terms of economies of scale.

The White Paper stated:

*The new arrangements will promote greater diversity in higher education rather than any artificial equalisation of institutional roles. Institutions that attempt to cover all areas of teaching and research compromise their ability to identify, and build on, areas of particular strength and the achievement of areas of genuine excellence. The ultimate goal is a balanced system of higher quality institutions, each*
with its particular areas of strength and specialisation”.

This statement suggests that the Government wanted to develop a higher education system based upon diversity rather than uniformity.

The White Paper’s final section - Section 4 - was Organisational Effectiveness. It focussed on institutional management and staffing and emphasised the need for change in the administrative structures and procedures of institutions. The White Paper stated that effective management at the institutional level would be the key to achieving many of the Government’s objectives for the UNS:

a) growth in areas of national need;
b) an effective partnership with other parties to the education and training process, including employers;
c) improvements in equity and access to higher education; and
d) efficiency of operation.

Any review of the effectiveness of the White Paper reforms, particularly in terms of institutional management’s role, will need to take these issues into account.

The White Paper’s definition of effective management may be found in this statement:

“The Government's aim is to enhance the autonomy and capacity of institutions to direct their resources flexibly and effectively to meet their designated goals...As autonomy increases, however, so the need for accountability grows”.

The Federal Government was stating that institutional management would be allowed the autonomy to use their resources flexibly but in doing so they needed to meet goals agreed by both the institution and Government. The trade-off for being able to control expenditure was being held accountable for how these funds were spent in terms of the agreed goals.

The White Paper’s guidelines for institutional management began with governing bodies. It suggested the selection of members of governing bodies was critical, particularly in terms of how they see their role on the Board or Council. Effective members were those who were not advocates of particular interests but those who saw their overriding responsibility to act in the best interests of the institution. Governing bodies provide a mechanism for a range of inputs into policy making and a process which facilitates public accountability but their effectiveness depends upon their composition, particularly in terms of how the Chancellor and the Board members see their role.

The White Paper indicated that Government “expects governing bodies to delegate clear responsibility and authority to their Chief Executive Officers to implement agreements reached with the Commonwealth, and to hold them responsible for that implementation”. This suggested that
CEOs should be given the power to manage their institution but that they will, in turn, be held accountable for the performance of their institution in meeting the Government's "contract" in the form of the agreed goals.

The Federal Government's concern that effective institutional management be developed and its perception that performance was linked with organisational structure was illustrated by the White Paper statement that Government would assist institutions in undertaking reviews of their internal structures. The reviews were designed to help institutions achieve:

* strong managerial modes of operation, which remove barriers to delegation of policy implementation from governing bodies to Chief Executive Officers and then to other levels, while maintaining a variety of inputs to policy determination.
* adequate levels of consultation with, and accountability to, government, employers, employees, students and the community.
* streamlined decision making processes.
* maximum flexibility in the capacity of an institution to implement new policies, with minimal time lag between making and implementing decisions.

The White Paper's guidelines for institutional management concluded with:

"The Government's primary concern is with the effective performance of the higher education system as reflected in the development and implementation of strategic planning, performance monitoring and review, according to the agreed educational profile of each institution".

The importance of assisting the Commonwealth to develop an agreed profile or "contract" for each institution and then in ensuring its effective implementation was again repeated. The White Paper indicated that development of a strategic plan was the way to set, implement and monitor the agreed goals for the institution.

The White Paper did not provide many details on how to measure institutional performance other than the somewhat vague guidelines set out for the development and implementation of the educational profile. The Paper contains a small section on performance indicators which contained little more than a list of issues which were to be covered in future reviews of performance indicators. This list contained:

* student demand;
* course completion rates;
* quality of teaching and curriculum design;
* relative staffing provision and measures of academic staff performance in various aspects of research, publication, consultancy, and other professional services.
Thus, while the White Paper outlined measures for effective institutional management and a preliminary list of performance indicators, the Paper's fundamental argument for effective and efficient higher education institutions was that fewer larger institutions would result in a more effective and efficient system. The Federal Government's educational objectives, as with its economic objectives, relied upon an assumed relationship with institutional size.

4.2.5 The Link Between Size, Efficiency and Effectiveness

The rationale underlying the White Paper was that having a small number of large institutions would result in a rationalisation of resources and the potential of significant financial savings which, in turn, would result in a more efficient and effective higher education system.

The concept of synergy suggests that there should be gains in efficiency and effectiveness as organisations increase in size. The notion is that 1 + 1 + 1 should be greater than 3. However, size is more efficient when it is concentrated within a small geographic area. It is more efficient, and perhaps more effective, to teach 15,000 students spread over two campuses within two kilometres of one another than it is to teach the same number of students spread over eight campuses and 150 kilometres. Institutions which have geographically dispersed campuses involve significant financial costs; including communication, transportation and administrative costs.

Dalton, Todor, Spendolini, Fielding, and Porter (1980) in their comprehensive review of the literature on organisation structure and performance found:

"At the sub-unit level of analysis, there is evidence of an inverse association between size and performance. At the organisation level, all available evidence suggests that there is no clear, systematic relationship between organisation size and performance".

Despite this, the perception remains that as organisations increase in size their performance becomes more effective and efficient.

The relationship between size, efficiency and effectiveness within Australia's higher education institutions has been widely debated since the release of the Green and White Papers. The Australian newspaper's editorial on 8 April 1991 reflected the public's growing distaste for the Federal Government's economic objectives for the higher education system:

"How disappointing that the higher education debate has been reduced to a discourse on the potential impact of higher education on our gross national product. Debate focuses on the belief of the nation's policy makers, Dawkins in particular, that increased participation in higher education produces a better educated, more highly skilled and adaptable workforce. The notion that education
alone will lift productivity and promote economic growth is at least debatable.

The White Paper reforms created a period of tension between the Federal Government and the higher education sector. The institutions felt they were under attack from Government while the Commonwealth watched the sector's performance closely. Both the Government and the institutions were concerned with the performance of the Unified National System and whether it had achieved its objectives. Examinations of the UNS's performance continued to explore the relationship between institutional size, effectiveness and efficiency.

Dawkins responded to criticism of his reforms by suggesting some universities had deliberately structured their mergers to avoid any prospect of saving any money. Dawkins disputed reports there had not been savings from the UNS amalgamations:

"I am not saying savings have occurred in all places. In fact some amalgamations seem to have been deliberately organised so as to defy the prospect of savings by establishing extraordinarily elaborate new systems of management".

Dawkins added to the ongoing tension between Government and the institutions by claiming that "savings could be made if merged institutions wanted to make them".

However, the potential for savings varied with each amalgamation. This was particularly illustrated by the UNS's creation of a new organisational structure for Australian universities: the federated network structure. This raises an important issue within the context of this research. The White Paper reforms and the creation of the UNS were founded upon assumptions about the relationship between institutional size, efficiency and effectiveness. The UNS also created the federated network structure which combined several smaller institutions into a single larger institution. In this sense, the federated network structure was the same as the other amalgamations and mergers which created the UNS. However, the network universities were unique in that they were different from the traditional university structure. They allowed for network members to retain substantial autonomy and to exist as separate institutions within a single organisational structure. This raises questions of whether the network structure was designed to achieve the objectives of the White Paper and the UNS. The relationship between institutional size, efficiency and effectiveness was strongly criticised by most observers in the period following the White Paper. However, the criticism was strongest at the federated network universities.
4.3 Consolidations, Amalgamations and Mergers

4.3.1 Overview

The major issue in Australia's higher education sector in the period from 1988 to 1993 has been amalgamations between institutions. The Federal Government felt amalgamations would help achieve its economic and educational objectives for the UNS. The institutions agreed to enter into amalgamations because it seemed the only way to ensure survival and prosperity within the UNS. Both Government and the institutions were interested in the performance of the amalgamations from an economic and educational point of view.

The amalgamations which followed the White Paper aimed to create a smaller number of larger higher education institutions. The Green Paper claimed that larger institutions offer education, economic and other benefits for students, staff and institutions, including a wider range of courses, better facilities and services, and more flexibility in teaching and research loads. It also suggested that larger institutions tend to be more flexible, more responsive to community needs, and better able to manage their own affairs. Particular attention was drawn to possible savings in merging adjacent institutions. On the other hand, possible problems or costs of consolidation were largely ignored, though it was admitted that some advantages can be secured from organisational linkages other than full amalgamation.

The debate over the higher education sector's amalgamations was inextricably linked with the rationale for creating them. Examinations of the performance of the UNS and the institutional amalgamations involved questions of the association between institutional size, efficiency and effectiveness. In April 1989, the release of a Report on the Taskforce on Amalgamations suggested that some institutions had concentrated only on problems associated with the new institutional system and had limited horizons as to the potential advantages. The Report stated:

"The best mergers are those where there is general agreement between the parties as to the functions of the new institution, the process whereby these might be fulfilled and the likely outcomes".

However, general agreement amongst amalgamating institutions proved difficult to achieve.

Many smaller institutions which merged with larger ones were usually swallowed up and ceased to exist as a separate organisational entity. Administrative and academic staff were relocated according to the central location of their function and simply became part of the organisational structure of the larger institution. There were several potential advantages in these mergers. There were likely to be economies of administrative overheads, staff costs, student services, maintenance and supervision of
grounds and so on, if these activities are centralised. He felt there was also an advantage in having a bigger mass of resources to control and distribute. However, the federated network structure was a different type of amalgamation.

4.3.2 Historical Development of Amalgamations, Consolidations and Mergers in the Australian Higher Education Sector from 1988 to 1993

The following provides an overview of the historical development of amalgamations within Australia's higher education sector in the period from 1988 to 1993. It is designed to provide a background to the research's main findings.

The first merger approved following the release of the Green Paper occurred in April 1988 when the University of Melbourne and the Melbourne College of Advanced Education announced plans to merge in 1989 forming Australia's largest teacher-education institution. The University of Melbourne merger began a landslide of merger negotiations as almost every higher education institution in Australia sought negotiations in order to find a suitable partner(s). The end of the binary system also encouraged several colleges of advanced education openly to consider transforming into a university.

In late September 1988, the first news emerged of plans to create a "mega-university" in New South Wales as a new super sized University of New South Wales. A proposal prepared by the Office of Higher Education in the NSW Ministry of Education outlined plans for the University of NSW to merge with the Riverina-Murray Institute of Higher Education, the Macarthur Institute of Higher Education, the Mitchell Institute of Higher Education, and Kuringai Colleges of Advanced Education in 1989 to form a 30,000 student institution. A discussion paper outlining the proposal was forwarded to the five institutions involved for comment. The institution was to be called the University of NSW with each campus name being followed by its location, University of New South Wales, Mitchell for example. Metherell favoured the proposal. The university would have a central Board of Governors to coordinate five academically-independent campuses. Each member institution would be independently controlled and managed by its Chief Executive officer called a president assisted by an advisory council. The author of the report, Mr Ron Parry, said "multi-campuses would facilitate a rationalisation of existing activities and long range planning for new courses, and would encourage better management of the total resources available to higher education". Among the disadvantages were that a multi-campus university might be more bureaucratic, slow to move and more impersonal.

On 1 March 1989, Metherell and Dawkins revealed an updated plan for NSW. Metherell's plans for NSW's higher education institutions were closer to the White Paper than those of almost any other state. Metherell's restructuring plan which proposed widespread amalgamations and mergers and the
The creation of a state-wide UNSW network was the closest to what Dawkins wanted from the White Paper. However, UNSW academic staff remained opposed to the plans for a mega-university UNSW. They felt that the integrity of their institution was being sacrificed for an ill-conceived structure.

Metherell was forced to back down on 8 March 1989 in the face of growing opposition from higher education institutions in the state. Plans to push through legislation restructuring higher education in NSW collapsed when Metherell confirmed that tertiary institutions had called for more discussion on the proposals. Metherell said that drafts would be revised where necessary to ensure that essential university standards were maintained and the balance of interests of the institutions in the networks and mergers was preserved. The strength of opposition to the proposal was illustrated by a general meeting of staff and students at the UNSW which rejected the network UNSW outright.

On 18 March 1989, the Chancellors of the seven NSW universities condemned key elements of the State Government's plans to amalgamate them with colleges as "wholly unacceptable, enabling the possibility of great abuse". However, the release in April of the Report of the Taskforce on Amalgamations was a timely reminder from the Federal Government that it would not tolerate opposition to its UNS plans. To help motivate institutions, the Taskforce Report recommended that a total of $21 million should go to institutions from the National Priority (Reserve) Fund. In NSW, the only unresolved issue was Macarthur which wanted to remain independent while it moved towards university status. To bring university education to Sydney's South-West, the Task Force proposed that Macarthur either merge with Wollongong or incorporate as a member of UWS.

The growing unrest over the Federal Government's program of amalgamations emerged in August 1990 as the strains created by mergers begin to surface. Academic unions at a number of campuses said that their institutions had similar problems to those at the UNE which appeared almost certain to de-amalgamate into at least two smaller institutions. Reports by unions suggested signs of discontent had already surfaced at the University of Tasmania, the University of Newcastle and Charles Sturt while other campuses were feeling the effects of funding shortages and management problems.

Further problems with the UNS surfaced on 20 December 1990 when, after a year of inter-campus tension, La Trobe university effectively asked Bendigo CAE to commit to the amalgamation or leave. La Trobe University, which had been struggling to sort out its relationship with its university college at Bendigo since they amalgamated in January 1990, had lost patience. In January 1991 the break up of the merger between La Trobe University and Bendigo CAE became the first failure of the UNS. The reasons for the failed relationship were to prove prophetic in the failed relationship at the University of New England which was, at that time, becoming irreconcilable.

The series of amalgamations, consolidations, and mergers which followed the release of the White Paper in 1988 and created the UNS caused widespread debate and problems at institutions throughout Australia. While this research examines the performance of three of the amalgamated universities, the historical development of the UNS's amalgamations in the period 1988 to 1993 is
dominated by the efforts of the Federal Government to show a relationship between institutional size, effectiveness and efficiency and the problems experienced by amalgamated institutions to achieve effectiveness and efficiency within new organisational structures.

4.4 The Relationship Between Government and the Higher Education System

4.4.1 Introduction

The White Paper heralded a new relationship between the Federal Government and Australia's higher education institutions. It marked the culmination of 40 years of growing Government control and, under Dawkins, the Government had achieved a framework for regulating the higher education system. In essence, the relationship between the Federal Government and the higher education system in the period 1988 to 1993 involved a battle for autonomy and control. The institutions wanted autonomy from Government and the Federal Government wanted control of the institutions. The Federal Government sought control of the higher education system with two fundamental mechanisms: a) the White Paper and the criteria for membership of the UNS and b) the implementation of an annual "contract" in the form of the educational profiles.

In his address to the Green Paper conference, Dawkins suggested the Green Paper proposed to give higher education a greater role in the process of economic development and adjustment. Dawkins suggested that this would be due to sustained growth in student numbers, and measures to strengthen institutions and to make them more responsive. Dawkins proposed that there would be a new relationship between institutions and the Federal Government. This relationship would come to be based on the annual institutional profile discussions described by Dawkins as "a process of careful and rational consideration of the options for resourcing the required growth". The profile discussions were essentially a contract between Government and the institution to achieve mutually agreed goals. They allowed the Federal Government to exert influence on institutional objectives.

In his address, Dawkins agreed that it is important to understand the relationship between higher education institutions and government. He acknowledged that funding is the key to the relationship and that the relationship has been a source of tension ever since higher education institutions began to receive a significant proportion of their income through public funding. Institutions' dependence upon Government for funding, and the Government's desire to involve itself in institutional objectives in return, produces the tension in the relationship between institutions and government. It is through funding that the Australian Federal Government can control the higher education sector.
4.4.2 Brief History of the Relationship Between Government and the Higher Education System

The reforms which emerged from the Green and White Papers were the culmination of growing Government control of the Australian higher education system.

From 1976 until the Green Paper in 1987, most Australian amalgamations have involved former teacher's colleges and other small CAEs. The main amalgamation activity during this period was the Federal Government's "Razor Gang" decision of April 1981 which required 30 teacher education CAEs to amalgamate or lose all Commonwealth funding. All the required amalgamations took place, except those involving Armidale, Newcastle, Milperra and Hawthorn colleges.

However, while the argument that environmental pressure forced the Federal Government to introduce its White Paper reforms appears logical, there is an equally compelling argument that the Government was unhappy with the performance of its universities and sought greater control of the system in order to exert the type of influence it desired in order to obtain the performance it required. This is supported by the following brief history of the relationship between the Federal Government and the higher education system.

The Federal Government has always had an interest in the performance of its universities. However, Government control of the system was always hampered by the British model, adopted by Australian institutions, which argued that universities should be remote from Government interference. In December 1956, Prime Minister Menzies invited Sir Keith Murray, the then Chairman of the University Grants Committee in Great Britain, to head a committee of inquiry into the future of Australian universities. The Murray Committee submitted its report in September, 1957 and recommended that the Commonwealth become more involved in the affairs of the universities, particularly with regard to finance and development, and that an Australian Universities Grants Committee be established to advise the Government on university matters. The creation of Colleges of Advanced Education (CAEs) followed.

The Commonwealth Liberal government lost the Federal election to Labor in 1983. Labor had promised not to proceed with those forced mergers imposed by the 1981 "Razor Gang" decisions which had yet to be completed. However, Labor never said it was opposed to merger in principle and the Commonwealth Tertiary Education Commission remained firm in its advice that the merger of the four colleges who had resisted the Razor Gang should proceed.

Perhaps more importantly, Australia was facing an economic crisis with a huge foreign debt, high unemployment, and an internationally uncompetitive economy. The Government was committed to the economic restructuring of Australian society, which involved the further rationalisation of higher education and the tying of education goals more firmly to economic ends. Whilst the Government
supported merger in principle, it did not publicly designate those institutions to be merged, and indicated it would not force mergers on unwilling institutions. However, the Federal Government's powerful position as the supplier of the majority of university funding ensured that it had the means to exert political pressure when required.

Immediately following the release of the Green Paper in 1987, there was a furious round of discussions involving almost all of Australia's higher education institutions aimed at finding a suitable partner(s). During 1988, discussions became less grandiose and cautious as institutions awaited Government direction. Dawkins maintained his position that merger would not be forced and that discussions were entirely left to those individuals institutions involved. However, the threat of Government funding withdrawal if institutions did not agree to the membership criteria outlined for the Unified National System ensured that institutions responded to the Government's plans. While stating that the Federal Government would not designate who should amalgamate with whom, the Dawkins appointed a task force to help ensure that amalgamation was implemented. The Report of the Taskforce on Amalgamations was presented in April 1989. It outlined options for every higher education institution in Australia and provided a blueprint for the amalgamation process.

In his address to the Green Paper conference, Mr Dawkins touched on the fundamental difficulties in the relationship between the higher education sector and government when he stated that:

"...higher education institutions point to the need for autonomy and freedom from political interference, to the need for a detachment from short-term economic and political imperatives, and they demand support for fundamental and long-term research and scholarship".

These comments reflect the underlying tension in the relationship between Government and the higher education institutions: universities want governments to provide funding in order to allow them to do what they want to do, however, they do not want to be used as a tool of government reform or as a means for achieving political aims. Universities protect their autonomy jealously. The difficulty comes in the fact that Government provides the bulk of the funding which allows universities to exist. It is reasonable for Government to expect some control of the objectives of publicly funded institutions, particularly when it provides most of their funding. The tension in the relationship lies within the degree of control desired by Government and allowed by the institutions.

Government monitoring of public expenditure is widespread throughout all public policy areas. At the Green Paper conference, Dawkins suggested that government "interference" in higher education has been normal behaviour for decades. The difference in the Green Paper and the subsequent White Paper approach, according to Dawkins, was that a new and more effective relationship would be constructed. The new relationship would be based on "an implicit distinction between government interference in the decision-making processes of institutions, and government requiring decisions to be made by institutions, such that they can be more quickly and efficiently respond to changing circumstances". Dawkins wanted the new relationship between Government and the institutions to
make universities more responsive to change and more effective and efficient.

Dawkins concluded his address by outlining an incentive for those institutions wanting greater autonomy from government based again on the critical factor in the relationship: funding. He suggested "broadening the funding base of institutions will also enhance their independence and autonomy as they will be less directly reliant on government for their funding". Thus the Government was indicating that those institutions who could generate their own funds through donations, commercial activities or any other non-government revenue, would be allowed to achieve their aim of autonomy. It was a subtle way of reducing government responsibility (in monetary terms) for the higher education system by encouraging institutions to develop and increase their own funding sources. Dawkins added another dimension to the relationship when he indicated that effective internal management would be the greatest guarantee of freedom and autonomy higher education institutions could have. Thus the challenge for institutions desiring greater autonomy from government was to develop their own non-government funding sources and to demonstrate effective management.

4.4.3 Government Control Versus Institutional Autonomy

The dominant issue in the relationship between the Federal Government and the Australian higher education system in the period 1988 to 1993 was the battle by Government for control of the system and by the institutions for autonomy from Government control. The Government wanted greater control so it could influence and monitor the efficiency and effectiveness of Australia's higher education and increase its role in the nation's economic performance. The institutions had a long history of autonomy and felt they deserved a high degree of immunity from Government interference and current management issues such as efficiency, effectiveness, and quality control.

Meek and Goedegebuure in their Higher Education: A Report surveyed the major stakeholders in the higher education system about the affect of the White Paper reforms and, more specifically, the relationship between Government and the system. The authors suggested that Government may deliberately use merger as a mechanism for restructuring higher educational systems, or it may merely set the conditions that are likely to stimulate a large number of institutional amalgamations without direct intervention.

The authors' study found that the higher education institutions felt the Federal Government's reforms aimed to gain more control of the higher education system. The response to the proposed UNS varied by institution, however, there was generally more support from the CAE sector than from the universities. CAEs clearly had more to gain from the UNS than the universities because they envisaged having university status and all the benefits this provided such as funding and the opportunity to develop a research profile. The universities felt they would have less funding and lower
standards if forced to merge with CAEs. While the response varied, all institutions understood that Government expected them to improve their efficiency and effectiveness and they recognised the need for improved management.

4.4.4 The Public Debate

Between 1988 and 1993 there was widespread public debate over the direction and performance of Australia's higher education system. The White Paper reforms restructured the higher education sector and increased Government control of the system. Much of the debate focussed upon the relationship between Federal Government and the institutions. The following overview analyses the strength of feeling during this period and highlights some of the key issues which emerged.

In July 1988, the initial response from stakeholder groups such as unions and the AVCC was that most thought the White Paper was an attempt by the Federal Government at over-regulation. By July 1989, the academic community remained divided on whether the White Paper reforms would ultimately benefit higher education. Some viewed the changes as a positive, indeed necessary, shake-up of the system. Others felt it would have a disastrous affect on the quality of education. The latter fears seemed justified in 1991 when the Federal Government introduced its Quality policy for higher education. In an education system where the collegial style of governance was expected, the suddenness of the changes, and the perceived unwillingness of Dawkins to consult before acting, had left a general bitterness towards him.

In December 1990, the growing conflict between the Federal and State Governments for control of higher education came to a head when the AVCC warned that State Governments were preparing to reverse the present direction of federalism by taking back some control over universities from the Commonwealth. The AVCC said "the way is being prepared for a return to State Government funding of higher education - a move which would take universities back to the days before 1974 when they had to serve several masters at once". The Academic Union FAUSA supported the AVCC stand and said, "All logic seems to indicate that the states should get out altogether. Most of the goals of the present system are national goals and basically the states have not proven that they can take anything like a national role in higher education. The whole trend in federalism has been to do away with all forms of State/Federal duplication".

In July 1991, the Federal Opposition developed a campaign against Dawkins and Government control of the higher education system. Opposition Education spokesman, David Kemp's said "the centralisation of power over the university sector in the hands of the Canberra bureaucracy and the Industrial Relations Commission is damaging higher education. The universities must have restored freedom to manage their own affairs if the 'Dawkins Disaster' is to be reversed and the damage repaired".
The public debate over higher education between 1988 and 1993 was dominated by strong criticism by the institutions of the Federal Government's White Paper reforms and, in particular, their objection to growing Government control of the higher education sector. Much of the debate questioned the success of the reforms and the performance of the UNS. A number of amalgamations experienced problems and some performed so poorly that they were forced to de-amalgamate. In general terms, the White Paper's envisaged economies of scale, improved management, and other indicators of increased efficiency and effectiveness have not yet been achieved.

4.5 After The White Paper

In early 1991, the Federal Government responded to growing public concerns and launched an inquiry into the quality of Australia's higher education system. The White Paper reforms hoped that quantity of outputs combined with improved efficiency and effectiveness of the institutions brought about by structural change would result in an improved contribution from higher education in the nation's economic recovery. There were signs in 1991 that this was not proving successful. The result was the replacement of the Access and Equity policy with the Quality and Diversity policy. In 1993 there emerged signs of a new binary divide as the leading research institutions, known as the 'big seven', developed plans to establish a new hierarchical structure within the UNS.
5.1 Introduction

This chapter presents a historical context for the analysis which follows by examining the formation and early development of the three network universities: the University of Western Sydney, the University of New England, and Charles Sturt University.

This research adopts Stern's (1981) framework for network analysis which suggests that network activity is a function of the historical development of relationships as well as current structural characteristics, and, second, that the explanatory power of the network approach depends on an analysis of the processes that link network structure to the interests of organisations in the network.

Whetten (1981) suggests that the study of interorganisational relationships attains its primary theoretical importance only when the investigator is able to understand the process that brought the network to its current state. This chapter explains the historical process which led to the current state of the network universities. It proposes that many of the issues which were important to the member institutions in the early stages of their interorganisational relationships heavily influenced the nature of the relationships which followed. These issues included the members' motivations for forming interorganisational relationships with other members, their interpretation of the federated network structure and the mandate, their perception of the permanency of the relationship, and their perception of the benefits and costs which would result from the relationship. These issues were essential to the historical development of the interorganisational relationships within the network universities. They were also fundamental to the operation of the federated network structure and its performance.

The theoretical frameworks used for this chapter's analysis are derived from the exchange perspective and mandated relations perspectives of Interorganisational Relations. The frameworks derived from the exchange perspective are environmental uncertainty and organisational exchange. Environmental uncertainty is used to explore whether the environment influenced the formation of the network universities' interorganisational relationships. Organisational exchange is used to explore the extent to which benefits and resources were sought from the relationships. It includes a theoretical construct provided by Oliver (1990) which examines the motivations for relationship formation. The frameworks derived from the mandated relations perspective are the distinction between voluntary, mandated, and partially mandated relations.

The chapter concludes by analysing each network university's early interpretations of the federated
network structure using theoretical frameworks derived from Interorganisational Relation's operational definitions. The analysis aims to provide an overview of the federated network structure using the following frameworks:

1. whether the network is participatory, independent or mandated;
2. the network spectrum continuum;
3. the network's political economy;
4. the network's advantages and disadvantages;
5. network synergy.

The chapter follows the following format: each section is introduced with an overview of the relevant theoretical frameworks drawn from the literature; the three network universities are then compared and contrasted using the literature's frameworks in order to evaluate the network universities from an interorganisational relations perspective and to test theoretical constructs within the literature.

5.2 Environmental Uncertainty

5.2.1 Theoretical Overview

Environmental uncertainty is drawn from the exchange perspective of interorganisational relations. Theoretical frameworks derived from environmental uncertainty consider interorganisational relations as a means of controlling or reducing the influence of the environment on the organisation. The degree of influence is determined by how much the organisation depends upon the environment for information and resources. If the organisation can exist independently of other organisations and does not require information from its environment, it can survive and perhaps succeed as an isolated entity. Under these circumstances, the environment's influence is low. However, empirical investigations have increasingly shown that few, if any, organisations are so self-sufficient that they can survive without accessing elements from their external environment. Under these circumstances, the environment's influence is high.

The influence of the environment becomes dysfunctional if the organisation feels it is too dependent upon the environment or if it feels it cannot predict or control events within its environment. Under these circumstances, the environment becomes uncertain. Environmental uncertainty is based upon the perception of the environment as a source of information. When the environment is considered as a source of information, the basic theoretical framework used by theorists has been uncertainty. Theorists have generally assumed that complexity and instability of the environment generates uncertainty. Under conditions of environmental uncertainty, particularly resource scarcity,
organisational exchange becomes critical. Theorists generally agree that under these conditions, interorganisational relations are initiated because they will allow organisations to control their environment, gain scarce resources and thus reduce environmental uncertainty.

The environmental uncertainty approach towards Interorganisational Relations considers an organisation's environment as the flow of information perceived by staff at the organisation's boundaries. The perception of those staff responsible for gathering, analysing and disseminating information about the environment then becomes critical. Their understanding of the environment is determined by their perception of their information about the environment which, in turn, influences the organisation's understanding of the environment. If the organisation considers the environment is complex and characterised by rapid change, it will feel an uncertainty and lack of control over its environment. Within this context, relationships with other organisations are evaluated in terms of their capacity to reduce environmental uncertainty.

The interorganisational relationships formed by higher education institutions to create the three Australian network universities, which are the focus of this research, were motivated by a perceived need to reduce environmental uncertainty. The analysis which follows will consider the environmental uncertainty which faced the network member institutions at the time they sought interorganisational relationships to form the network universities. It is considered important at this stage of the research to introduce the motives which led to the creation of the network universities. Therefore, the analysis includes a theoretical framework provided by Oliver (1990). Oliver proposes that the reasons for relationship formation refer to the underlying causes or contingencies that induce the formation of interorganisational relationships. She proposes six critical contingencies as generalisable determinants of interorganisational relationships: Necessity, Asymmetry, Reciprocity, Efficiency, Stability and Legitimacy. Although each of these determinants may be a separate and sufficient cause of relationship formation, the decision to initiate relationships with another organisation is commonly based on multiple contingencies. While member institutions' motives for joining their network university may be found in each of Oliver's contingencies, the first three were found to be the strongest factors in the creation of the network universities.

In exploring the historical context of the formation of the network universities' interorganisational relationships using the environmental uncertainty theoretical framework, the research also aims to test several theoretical propositions within the literature and to examine some weaknesses of the literature.

The propositions are:

Proposition 1: When organisations operate under conditions of environmental uncertainty, they will seek interorganisational relationships with other organisations in order to reduce this uncertainty.

Proposition 2: Organisations will seek to form that type of interorganisational relationship which
involves the least cost to the organisation in loss of autonomy and power.

The phrase "seek interorganisational relationships" in proposition 1 might cover a range of relationships from coalitions, sharing of facilities, sharing of staff and courses, through to complete organisational merger and might be considered too broad. This issue is discussed in detail later in the chapter in section 5.5 under the network spectrum continuum analysis. However, for the purposes of proposition 1, the seeking of interorganisational relationships refers to organisations who desire a formal relationship with some degree of commitment from participating organisations. The degree of commitment will vary from a loose arrangement allowing for a high degree of autonomy for each participating organisation to a tightly formalised arrangement with low autonomy and high central control.

The weakness identified within the literature is that the environmental uncertainty view of Interorganisational Relations may be perceived as seeking to reduce the anxiety of senior executives. It is perhaps too simplistic to accept that organisations enter into relationships with other organisations because senior executives are unable to understand the complexities of their external environment. Theorists have perhaps focused too much on reducing senior management anxiety about environmental uncertainty. There are numerous environmental constraints which restrict the strategic decision making of the senior executive. The research aims to determine the importance of reducing environmental uncertainty compared with other benefits or rewards perceived by the organisation when deciding to enter into an interorganisational relationship.

5.2.2 The Environmental Uncertainty Facing Australian Higher Education Institutions in 1988

The higher education institutions which joined together to form the University of Western Sydney, Charles Sturt University, and the University of New England faced substantial environmental uncertainty during the period of the release of the Federal Government Green (1987) and White (1988) Papers. This uncertainty was based upon the institutions' perception of the information provided by the Green and White Papers. The Federal Government was the dominant force in the higher education environment. The Government's influence on the environment was largely because it was the main source of funds for Australian higher education institutions and each institution depended upon the Government for survival. The Green and White Papers represented perhaps the most dramatic reform of higher education in Australia's history. The challenge for each institution was to determine the implications of the White Paper and then to respond to it.

The Australian higher education environment in 1988 was, in Emery and Trist's (1965) terms, in turbulence. The environmental context in which institutions existed was changing, at an increasing
rate, and towards increasing complexity and uncertainty. Conditions of turbulence are characterised by high environmental uncertainty creating problems which exceed the capacity of organisations to cope with them. There is a rapidity and complexity of change which precludes the ability to effectively plan or predict for the future. Under these conditions, organisations seek interorganisational relations as a means to control or reduce the influence of the environment on the organisation. Theorists emphasise that organisations must adapt to their environment if they are to survive. Emery and Trist and the theorists which followed suggest that individual organisations cannot expect to adapt successfully to turbulent conditions simply through their own direct actions; they must seek the support of other organisations through interorganisational relations.

The main cause of the environmental uncertainty created by the White Paper was that it caused institutions to fear for their future. Many institutions, particularly small colleges of advanced education, did not know whether they would survive under the guidelines imposed by the White Paper reforms. Their fears were based upon their almost sole dependence upon the Federal Government for funding and their size. In order to continue to gain Government funding, they needed to be invited by the Government to join the new Unified National System (UNS). In order to gain an invitation to the UNS, institutions needed to meet certain size and other criteria set by the Government. Institutions' dependence upon Government for funding excluded the possibility of becoming independent of Government (eg. a private university) and meant that membership of the UNS was necessary for survival.

The White Paper made the following issues certain:

a) The Federal Government proposed to establish a Unified National System (UNS) of higher education.
b) Institutions were required to join the UNS if they were to obtain Federal Government funding.
c) There were size criteria which needed to be met in order to join the UNS.

Most institutions would have quickly understood that they needed to join the UNS if they wanted to continue to access Federal Government resources. Most of the smaller institutions would also have realised that they needed to merge with others in order to meet the size criteria.

However, the broader implications of the White Paper reforms would have been unclear. The White Paper made the following issues uncertain:

a) Which institutions would join the UNS.
b) Which institutions would join the UNS in their current structure.
c) Which institutions would amalgamate, how and with whom.
d) Which institutions would cease to exist.

Most institutions soon became involved in negotiations with various potential "partners". Many
institutions faced an uncertain future because they did not know whether they would merge with others or with whom and some did not even know whether they would continue to exist.

The theoretical framework of contingencies in the formation of interorganisational relations provided by Oliver allows us to further analyse the environmental uncertainty which faced the network university institutions in 1988.

The contingency of necessity states that an organisation often establishes linkages or exchanges with other organisations in order to meet necessary legal or regulatory requirements. The institutions which joined together to form the network universities sought interorganisational relationships with the other member institutions in order to meet the criterion for membership of the UNS.

The White Paper indicated that Australian higher education institutions needed to be part of the UNS if they wanted to gain access to Commonwealth Government funding. The Government also made it clear that organisation size would determine the volume of support, in terms of funds, universities received from the Government. Each of the institutions which joined together to form the network universities, with the exception of the former University of New England, were small institutions in terms of the White Paper size criteria. The White Paper implied that small organisations would have no real future in the Government’s plans for higher education:

“A student load of 2 000 EFTSU (is) the minimum load for an institution to qualify for membership of the unified national system;...a load of 5 000 EFTSU (will) justify a broad teaching profile and some specialised research activity; and a load of 8 000 EFTSU (is) the base for a relatively comprehensive involvement in teaching and research”.

While most of the network university institutions met the 2,000 EFTSU criteria for UNS membership, they would have received the minimum level of funding and would not have received funding for research. It is a long held tradition that universities are involved in both teaching and research activities. Furthermore, it is widely recognised that research activities largely determine a university’s national and international reputation. The Federal Government indicated that it would provide funding for research activities only for those institutions which had at least 5,000 EFTSU. The futility of small institutions existing independently was illustrated by these threatening overtones:

"...the Government encourages institutions with a student load in the 2 000 - 5 000 EFTSU range and with little prospect of substantial future growth to give serious consideration to their future as independent institutions”.

Whetten and Leung (1979) suggest that in situations like that facing the smaller higher education institutions following the release of the White Paper, the power of an external authority (the Federal Government) will combine with the anticipated repercussions of non-compliance - loss of resources
and expulsion from the field (the UNS) - to determine the likelihood that relations occur. The Government's powerful position as the almost sole provider of funds and the size criteria imposed by the White Paper combined to make the network university institutions perceive that they were forced to merge with other institutions. The former University of New England (UNE) was the exception because it was already a university (the other network university institutions were CAEs). UNE had slightly less than 8,000 EFTSU which meant it would have been guaranteed a place in the UNS as a research and teaching university. However, the University wanted a comprehensive involvement in both teaching and research and because it fell below the 8,000 EFTSU threshold for Government funding at that level of activity, it chose to seek relationships with others in order to meet the 8,000 EFTSU size criteria. The University also perceived the New South Wales North Coast, occupied by the Northern Rivers College of Advanced Education, as having the greatest growth potential. It therefore considered forming an interorganisational relationship with Northern Rivers as strategically sound.

The strong environmental influence of the Federal Government combined with the implications of non-compliance with UNS's membership criteria make it reasonable to conclude that the contingency of necessity played an important role in the formation of interorganisational relationships within the network universities.

The environmental uncertainty created by the White Paper meant that the network university institutions perceived themselves as being forced to join a university, join with another college(s) to form a university, or in the case of the University of New England join with a college(s). Each institution perceived that the Federal Government was forcing it to amalgamate in order to gain membership of the UNS. However, each institution also perceived that they had the freedom to choose which institution(s) they would join with. This perception is reflected in the contingency of asymmetry.

The contingency of asymmetry states that both the desire for control and the reluctance to relinquish control reflect asymmetrical motives in the organisation's decision to interact. When faced with the knowledge that they had to find a suitable partner(s), the network university institutions sought an organisation(s) which would allow them to meet their objectives while maintaining their autonomy.

Each of the network university institutions became involved in a series of negotiations with potential partners in order to determine which university or college they should join with. As the negotiations continued, it became clear that the institutions wanted university status and membership of the UNS but not at the cost of losing their identity. They sought partnerships which would retain the identity of the former institution and their autonomy whilst meeting the size criteria which would ensure membership of the UNS.

A major factor in the University of Western Sydney's member institutions search for suitable partners was the need to maintain their autonomy. The Hawkesbury Agricultural College and the Nepean College of Advanced Education explored a number of options and finally arrived at the possibility of joining together to form a university in Sydney's west. The creation of a new university in Western
Sydney with a federated network structure promised network member autonomy and some retention of each former institution's identity. Hawkesbury and Nepean feared being "taken over" by the University of Sydney. At one stage in 1988, there was a proposal by the State Government to join the Western Sydney CAEs with the University of Sydney. Under this proposal, Hawkesbury and Nepean were concerned that Sydney would have considered them merely colleges of the university and that the identity and autonomy of the former CAEs would have been quickly eroded. Both institutions lobbied the State and Federal Governments and ultimately forced Government to reject the proposal to join them with the University of Sydney. The Macarthur Institute of Higher Education wanted to stand alone and ultimately progress to independent university status. Macarthur eventually joined Hawkesbury and Nepean as the federated network University of Western Sydney because the network structure provided the greatest degree of autonomy of the options available.

Charles Sturt University's member institutions had also wanted to remain independent. In August 1988, the Mitchell Institute of Higher Education announced it sought university status. Mitchell wanted to become an autonomous institution within the UNS and call itself a university. The Chairman of the Council, Mrs Sheila Swain, said Mitchell would seek membership as an autonomous body:

"We currently have 3,600 full-time students, well above the 2,000 required for an autonomous university in the new system".

However, Mitchell had not yet understood the full implications of the White Paper's size criteria which meant that small institutions in the 2,000 to 5,000 EFTSU range could not establish themselves as research institutions. The Charles Sturt member institutions also felt the same fears of takeover experienced at Western Sydney. In March 1989, when Minister Metherell was proposing plans for a state-wide University of New South Wales, academics at Mitchell unanimously rejected the draft legislation:

"The proposed legislation is simply a takeover of two highly successful rural tertiary institutions by UNSW and academic staff are concerned that course offerings at Bathurst will be in doubt".

The Riverina-Murray Institute of Higher Education was more cautious than its Mitchell counterpart and it considered most options, including the NSW network proposal, before accepting an invitation to join Mitchell as the federated network Charles Sturt University. The NSW State Government was concerned that the two rural institutions could not justify independent university status on merit. However, strong objection from UNSW academic staff and Mitchell staff led to the Government abandoning the state-wide UNSW proposal. There was then little option but to join the western and south-western NSW colleges together as a university.

The creation of the University of New England was announced on 24 August 1988. It was to create Australia's largest university outside a capital city. The University was different to the other two federated network universities because it involved a university (the former UNE) and three colleges
(Armidale CAE, Northern Rivers CAE, and Orange Agricultural College). All of the member institutions wanted to retain their autonomy in the new structure and they entered the interorganisational relationships with the other member institutions with the understanding that they would retain autonomy. The exception was the former Armidale CAE which entered into a complete merger with the former UNE the result of which was the network member UNE, Armidale. However, it was to become apparent that the member institutions had different perspectives on the degree of autonomy the other member institutions would enjoy.

Within logistic constraints, most higher education institutions had freedom in choosing which university or college, if any, they would join. While Governments proposed various partners at different stages, it is clear that the network university institutions had the power to approve or reject who they merged with. This freedom is illustrated by the case of the Macarthur Institute of Higher Education which underwent a lengthy consultative process and considered numerous options before deciding to join the University of Western Sydney.

When the prospect of amalgamations was first raised in early 1988, the then Macarthur Institute of Higher Education's ruling body, Council, resolved to pursue a course of independence consistent with the view that eventually Macarthur should emerge as an independent university. The reasons for Macarthur wishing to remain independent were based on the feeling within the organisation that it was in a quite different position to other colleges of advanced education included in the network proposals. It was felt that South-West Sydney already had a rapidly expanding student population so that the Institute already had the potential to be larger than some of the newly formed universities. In February 1989, the then Minister for Education, Dr Metherell, announced the various network proposals and Macarthur was the only former CAE which remained independent. The Federal Minister also invited Macarthur to join the unified national system. However, at that stage, April 1989, Macarthur's priority was to "keep moving towards independent university status".

However despite its resistance, Macarthur came to realise that it could not gain university status without first gaining membership of the UNS and the only means of achieving this was through amalgamating with another institution(s). Staff and students began lobbying Government and argued that they wanted the privilege of university status. Once it became evident to Macarthur that it was in its best interest to obtain immediate university status, there was an enormous amount of work done by institute staff in collecting the necessary information to ensure that Council could make the best decision about Macarthur's future. A small negotiating committee undertook a round of discussions with several universities. The information from these meetings was fed back to a specially formed consultative committee which represented a cross-section of the various interest groups within the Institute. This committee had the task of weighing up the advantages and disadvantages of each option and presenting a set of recommendations to the Institute Council.

Thus it can be seen that considerable thought went into the decision to join or amalgamate with another or other universities. The list of potentially suitable options was narrowed down to four
universities: Macquarie, New South Wales, Wollongong and Western Sydney. The proposed relationship between Macarthur and the University varied in each situation. There were numerous criteria for evaluating each option. These included:

- the preservation of Macarthur’s autonomy in day-to-day operations;
- maintenance of the Regional Entry Test (introduced in 1985 as a special admissions policy aimed to improve access for school leavers in South-West Sydney);
- continuation of the associate diplomas and diplomas;
- support for the development of higher degrees;
- support for the enhancement of research activities;
- protection of the salaries and conditions of the staff;
- and guarantees regarding the future growth the Institute to meet the needs of the community it has sought to serve.

The University of Western Sydney’s capacity to meet these criteria exceeded that of the three other universities and therefore Macarthur decided to join UWS.

The energy with which each network university institution opposed amalgamations which threatened their autonomy and their decision to form federated network universities which promised autonomy make it reasonable to conclude that the contingency of asymmetry played an important role in the formation of interorganisational relationships within the network universities.

The contingency of reciprocity emphasises cooperation, collaboration, and coordination among organisations, rather than domination, power and control. According to the reciprocity perspective, interorganisational relationships occur for the purpose of pursuing common or mutually beneficial goals or interests. This contingency was the Federal Government’s motive for forming the federated network universities. The Government hoped that the network universities would facilitate the efforts of individual member institutions and help them to achieve more together than if they were separate institutions. A reciprocity model of interorganisational relationships is theoretically rooted in exchange theory. This is based on the assumption that resource scarcity may induce cooperation, rather than competition. Oliver suggests that the process of linkage formation typically will be characterised by balance, harmony, equity and mutual support rather than coercion, conflict, and domination. Further, potential partners will anticipate that the benefits of forming a linkage far exceed the disadvantages.

The contingency of reciprocity was the Government’s motive in the creation of the network universities but it was not a motive for the institutions. The Government hoped that merging the member institutions would emphasise cooperation, collaboration and coordination between the network members based on balance and harmony and result in mutual benefits. It is a contingency based far more on idealism than reality because it ignores the dynamics of the interorganisational relationships within federated network structures. The reality is that the network structure creates a political economy where network members seek funds and authority which causes interorganisational conflict.
and competition rather than cooperation, collaboration and coordination.

It is therefore reasonable to conclude that the contingency of reciprocity played a less important role in the formation of interorganisational relationships within the network universities. However, it was an important motive for Government.

Oliver's three other contingencies: efficiency, stability, and legitimacy did not play a strong role in the formation of interorganisational relationships within the network universities. Institutional efficiency was one of the Federal Government's major White Paper reforms and it hoped that the federated network universities would prove to be efficient and effective. However, the efficiency of the federated network structure was not a motivating factor in creating the network universities.

5.2.3 Conclusions

The analysis provides support for both proposition 1 and proposition 2. Certainly, the network university institutions faced environmental uncertainty during the period following the release of the Green and White Papers. Their uncertainty was caused by the information provided by the White Paper and their perception of this information determined their degree of uncertainty. Small institutions faced the greatest uncertainty because the size criteria for UNS membership placed their survival in jeopardy. All of the network university institutions, with the exception of the former University of New England, were the size of those institutions facing the greatest risk to their future. Their response was to seek interorganisational relationships with other institutions in order to meet the UNS size criteria and guarantee their survival. This supports proposition 1 by suggesting that when organisations operate under conditions of environmental uncertainty, they will seek interorganisational relationships with other organisations in order to reduce this uncertainty. While the network university institutions felt compelled to seek interorganisational relationships with other institutions, they felt they had a choice over which institution to join with. It is clear that in selecting suitable institutions to join with, each network institution wanted to retain their autonomy and identity. This was also illustrated by the strength with which institutions fought attempts to merge them with large established institutions which may have threatened their autonomy. This supports proposition 2 by suggesting organisations will seek to form that type of interorganisational relationship which involves the least cost to the organisation in loss of autonomy and power.

In terms of the weakness identified within the literature, there is some support for the proposition that organisations enter into relationships with other organisations in order to reduce environmental uncertainty and anxiety for senior executives. Environmental uncertainty is caused by the perception of information about the environment by those within the organisation responsible for gathering, interpreting and disseminating the information. In the case of the network university institutions, the
responsibility for interpreting the implications of the White Paper rested with each institutions' senior executives. The senior executives interpreted the White Paper and made the decision to enter into relationships with other network member institutions. This provides some evidence to support the literature's proposition. However, there were other factors involved in the decision to join a network university. These included survival, university status, and funding growth. It is clear, though, that the reduction of environmental uncertainty caused by the White Paper was a strong factor in the motives of each of the network university institutions in forming interorganisational relationships with other network members.

5.3 Organisational Exchange

5.3.1 Theoretical Overview

Organisational exchange is drawn from the exchange perspective of interorganisational relations. Theoretical frameworks derived from organisational exchange focus on resource procurement and consider interorganisational relations as a means of gaining necessary resources for the survival and success of the organisation. The organisational exchange approach towards Interorganisational Relations considers an organisation's environment as the resources available. If the organisation needs additional resources in order to survive and if these resources can be provided by other organisations, it will feel a need to develop relationships with other organisations. Under these circumstances, relationships with other organisations are evaluated in terms of the potential resources to be gained from the relationship.

Early definitions of interorganisational exchange focussed upon the exchange of resources. Organisations interacted and formed relationships in order to gain resources necessary for survival. This was a simple extension of the concept of social exchange. The exchange perspective of interorganisational relations gained complexity when the important concept of reward was introduced as a motivating factor in forming interorganisational relationships. This suggested that both organisations involved in a relationship need to perceive there are benefits to the relationship if it is to survive. The organisations also expect that the benefits will outweigh the costs of being-involved in the relationship or they will want to withdraw from the relationship.

This raises the question of what type of benefits or resources organisations seek from interorganisational exchanges. Interorganisational relations are essential to goal attainment. In order for organisations to achieve their objectives, they must possess or control certain elements in their environment. They must have clients to serve; resources in the form of equipment, specialised knowledge, or the funds with which to procure them; and the services of people who can direct these
resources to the clients. Few, if any, organisations have enough access to all of these elements to enable them to attain their objectives fully. Under these conditions of scarcity, organisations must select particular functions that enable them to achieve their aims as fully as possible. Theoretically, if the essential elements were in infinite supply, there would be little need for organisational interaction.

The interorganisational relationships formed by higher education institutions to create the three Australian network universities, which are the focus of this research, were motivated by a perceived need to gain resources necessary for their survival and success. The analysis which follows will consider the resource procurement sought by the network member institutions from the interorganisational relationships within the network universities.

In exploring the historical context of the formation of the network universities' interorganisational relationships using the organisational exchange theoretical framework, the research also aims to test a theoretical proposition within the literature and to examine some weaknesses of the literature.

The proposition is:

**Proposition 3:** Organisations will develop interorganisational relationships with other organisations if the relationship can provide them with access to necessary resources.

The weakness identified within the literature is that the organisational exchange view of interorganisational Relations has focussed on the concept of exchange in a very broad conceptual sense and has ignored the complexity of the interaction once organisations decide to exchange resources. Social exchange theorists have suggested resource procurement as a motive for interorganisational interaction but have generally failed to explore the complexities of the relationships between organisations in seeking these resources.

The literature has also failed to adequately explore the degree of importance placed on the relationship by each participant organisation. The degree of importance will influence the degree of desired autonomy, permanency of the relationship, and the need for mutual benefit. The literature needs to establish criterion for participant organisations to determine the degree of importance they place on their interorganisational relationships.

### 5.3.2 The Resource Procurement Sought By The Network University Member Institutions

The network university member institutions sought interorganisational relationships with others to form network universities because they did not have sufficient resources to survive independently. The
size criteria established by the White Paper for membership of the UNS indicated that small institutions needed to merge with other institutions if they wanted to gain access to resources provided by UNS membership. The Federal Government had indicated that it would fund only those institutions which were members of the UNS. The Federal Government provided almost all of the funding for resources necessary for Australian higher education institutions to survive and succeed. Only the largest institutions, such as the University of Sydney and the University of Melbourne, could contemplate existing independently of Government funds and even they accepted that they needed to join the UNS in order to gain access to Government funds necessary for survival. The small institutions, such as the network university members, did not have a choice. They simply had to join the UNS in order to survive.

Each of the network university members decided that joining a network university would ensure membership of the UNS and, therefore, access to Government resources necessary for survival. Membership of the UNS allowed university status and therefore access to the following resources:

- clients (students),
- better qualified and experienced staff,
- increased recurrent funding allowing purchase of computers, library books, equipment, and other necessary student and staff resources,
- increased capital funding allowing construction of new buildings and renovation of old buildings,
- expanded student services including student counselling, career counselling, tutoring and so on,
- an expanded range of products and services through postgraduate degrees and new market driven degrees,
- the opportunity to undertake research activities.

These resources were sought by each of the network university members and were the benefits or rewards expected from forming interorganisational relationships with other network members. However, there is an important distinction between joining the UNS, university status and the federated network structure. Each allowed the member institutions access to resources, however, each contributed differently to the members' resource procurement. Each member understood that the federated network structure had allowed them membership of the UNS and therefore Federal Government funds. However, they each felt that it was university status which was the critical factor in accessing the resources outlined above. With the exception of the former UNE, each member was a former CAE with restricted access to the type of resources outlined above. University status allowed access to these resources.

While university status was only available to those who gained membership of the UNS, (with the exception of private universities), and the federated network structure allowed UNS membership, it was clear that the member institutions associated their access to these new resources with university
status. They did not feel that these resources were a direct result of the federated network structure. This is a very important point because a fundamental theoretical construct of the organisational exchange view of Interorganisational Relations is that the benefits of being involved in a relationship must outweigh the costs or the organisation will want to withdraw from the relationship. The access to new resources was the major benefit perceived by the members in being a part of the federated network universities. However, the perception that these resources were due to university status and not the federated network structure meant that the network lost most of its perceived benefit.

The reason that access to new resources was not considered by the member institutions to be a benefit of the network structure was because they felt they would have been available to each of the member institutions as separate universities in their own right. For this reason, the members failed to recognise that a major benefit of the network structure was that it allowed the member institutions access to these resources through their collective mass.

In deciding to join their network university, the member institutions understood that there would be benefits and costs in being involved. They saw the benefits as being access to the resources outlined above and they saw the costs as being loss of autonomy and power. However, in some ways the federated network structure provided benefits rather than costs to member organisations in terms of autonomy and power because it provided more autonomy than they would have enjoyed as part of a large existing university such as the University of Sydney or the University of New South Wales.

The network member institutions' perception of the benefits and costs of interorganisational relationships did not fully appreciate the nature of federated network structures. The real benefit of the structure is in the potential for synergy so that the combined efforts of members exceeds the sum of their individual efforts. The real costs of the structure are in the economic and human (psychological) costs to manage the network and in the dysfunctional affects of the political economy. It was clear, however, in each of the federated network universities that member institutions entered into the relationship with the perception that the benefits or rewards in being a part of the network structure needed to outweigh the costs or they would wish to withdraw from the relationship.

The literature requires a more rigorous definition of organisational exchange which addresses the importance the organisation places on its interorganisational relationships and its implications. The degree of importance of the relation to each member organisation will influence the degree of desired autonomy, permanence of the relation and need for mutual benefit. This suggests the need to establish criteria for participant organisations to determine the degree of importance of their various interorganisational relations and how these varying degrees of importance affect them.

The importance of being a part of the federated network varied between network members in each of the network universities. These differences played an important role in determining how each network member interpreted the network structure in terms of their degree of desired autonomy, permanence of the relationship, and need for mutual benefit.
At the University of Western Sydney, the degree of importance placed on being a part of the network varied significantly. UWS, Nepean and UWS, Hawkesbury were the driving forces behind the creation of the University and they obviously placed a high degree of importance in being part of the network. The feeling was strongest at Hawkesbury due to its size. Hawkesbury was the smallest of the UWS network members and it had little prospect of growing at a rate which could make it an independent university under the White Paper guidelines. Therefore it understood that the University of Western Sydney was an opportunity to gain university status and be part of the UNS. It entered into the network with a low expectation of network member autonomy compared with its network colleagues, a high degree of desire that the network became a permanent relationship with the other members, and with only a reasonable need for mutual benefit. Nepean fought strongly for the network university in the face of proposals for Chifley University and being a college of the University of Sydney. It also saw the network as an opportunity to gain university status and placed a reasonable degree of importance on the relationship. However, its size and the fact it was allocated a large proportion of the University’s growth funds meant that it placed a low degree of permanency on the relationship. Nepean felt that there would be a possibility that it would break free of the network and establish itself as an independent university. Its position of strength within the network meant that it required a high degree of mutual benefit. It sought resources in return for being a part of the network and the network’s strong political economy was the result, in part, of Nepean’s vigorous pursuit of rewards from the network. Macarthur did not want to be a part of the network university. It wanted to stand alone as an independent university and was forced into joining the network by the Federal Government. Therefore it placed a low degree of importance on the relationship, expected a high degree of member autonomy, a low degree of permanency, and a high degree of mutual benefit. Macarthur entered the relationship hoping that it would grow to a size which would allow it to break off and stand alone as an independent university. However, while it remained a part of the network it sought rewards with the same vigour as Nepean which led to problems within the network’s political economy.

At Charles Sturt University, the network members had similar feelings about the network as Hawkesbury at UWS. The members understood that they were too small to exist as independent universities under the White Paper guidelines, and without the prospect of the strong growth likely at UWS, they depended upon each other for survival. Therefore, the members placed a high a high degree of importance on the relationship, expected a relatively low degree of member autonomy, a high degree of permanency, and a reasonable degree of mutual benefit.

At the University of New England, the network members had very different feelings about the importance of being a part of the network. The UNE, Armidale, together with the former Armidale CAE, was the driving force in creating the network university. It understood that its demographic growth was limited in a stagnant rural region. The population growth in Northern NSW was in the coastal regions occupied by Northern Rivers CAE. Armidale understood that its market would increasingly become the coastal region and it was sensible to join with Northern Rivers. Armidale was large enough to join the UNS as an independent university and did not require the network for university status. Therefore,
While it placed a reasonable degree of importance on being a part of the network, it expected a very high degree of autonomy and even control within the network, the permanency of the relationship was of little importance because it could exist independently within the UNS, and it desired a high degree of reward. The former Orange Agricultural College was similar to Hawkesbury and the Charles Sturt institutions in that it needed the network to be part of the UNS. UNE, Northern Rivers placed a reasonably high degree of importance on the relationship because it was too small to exist independently within the UNS and the network provided it with university status. It expected the network to provide a high degree of member autonomy and it expected a high degree of reward. Northern Rivers' most serious problem was that it had a very low degree of expected permanency from the relationship. It had been told by the Minister that it could expect independent university status as soon as it reached a certain size. It entered into the relationship expecting it to be a temporary arrangement and it is therefore not surprising that it had little commitment to the relationship or the network. Northern Rivers also expected the network to provide it with the resources to allow it to grow large enough to break free from the network and gain independence. Therefore, it sought rewards from the network with the same vigour as Armidale which ultimately caused irreconcilable differences within the political economy.

5.3.3 Conclusions

The analysis provides some support for proposition 3. Certainly the network university institutions sought interorganisational relationships with other members in order to gain access to resources necessary for their survival and success. The members needed to form interorganisational relationships in order to meet the size criteria for membership of the UNS which, in turn, guaranteed access to necessary resources. This suggests that organisations will develop interorganisational relationships with other organisations if the relationship can provide them with access to necessary resources.

In terms of the weakness identified within the literature, there is support for the proposition that the organisational exchange view of Interorganisational Relations has ignored the complexity of the interaction once organisations decide to exchange resources. This research supports the suggestion that the literature's organisational exchange framework needs to take into account the complexities of the relationships between organisations in seeking resources in interorganisational relations.

There is also support for the proposition that the literature has also failed to adequately explore the degree of importance placed on the relationship by each participant organisation. This research has shown that the degree of importance placed by each member influenced the degree of desired autonomy, permanency of the relationship, and the need for mutual benefit. The literature needs to establish criterion for participant organisations to determine the degree of importance they place on
their interorganisational relationships. The basis of this criterion should be:

1. The autonomy the organisation desires within the relationship.
2. The organisation's anticipated permanency of the relationship.
3. The benefits the organisation wants from the relationship.
4. The costs the organisation is willing to accept from the relationship.
5. Key performance targets or outcomes expected from the relationship.

It is important that each organisation involved in the relationship determines the suitability of the relationship based upon these criteria and makes its expectation of the relationship known to the other organisations involved.

5.4 The Nature of the Mandate

5.4.1 Theoretical Overview

The nature of the mandate is drawn from the mandated relations perspective of Interorganisational Relations. The literature makes a distinction between mandated, voluntary and partially mandated relations. In each case, the strength of the mandate or lack of it are seen as crucial to the behaviour of the member organisations involved in the relationship.

The importance of voluntary relationships is that the organisations involved are willing participants who perceive mutual benefits and believe that their relation will allow them to better achieve their goals than if they were entirely independent. These relations depend largely on goodwill and the acceptance by those involved that a participant in the relationship may withdraw at any time if it so desires. The critical aspects of voluntary relationships are a high degree of autonomy for those involved, a very low modicum of permanence of the relationship and the need for mutual benefit if the relation is to continue.

The underlying importance of mandated relations is the mandate itself. The strength of the mandate will determine the nature of the relations, the degree of autonomy of the participating organisations and the degree of permanence of the relation. The critical aspects of mandated relationships are a low to medium degree of autonomy for those involved, a medium modicum of permanence of the relationship and only a medium degree of need for mutual benefit if the relation is to continue.

The degree of autonomy of the member organisations will be determined by the mandate and by the way the network develops outside of the formal mandate. This will largely be determined by the
performance of the coordinating agency in performing its mandated functions and in its efforts in addition to its mandate to perform on behalf of the network as a whole. While the nature of the mandate will influence the degree of member autonomy, the tensions between autonomy and joint action will be determined by the performance of the coordinating agency and the capacity of the member organisations to use power and force within the network. The permanence of the relation will be established by the mandate, however, the degree of permanence will be dramatically affected if the member organisations perceive the mandate allows them the possibility to withdraw from the network at some stage. The need for mutual benefit will always be present, however, there will be a stronger need for perceived benefit from members who feel they entered the relation voluntarily.

The third major basis for interaction is the partially mandated relation. Raelin (1980) suggests that this is part of mandated networks and is distinguished from the legal-political network by the nature of the mandate. In partially mandated relations, the mandate is created by formal agreement while the legal-political network is imposed by law. Hall, Clark, Giordano, Johnson and Van Roekel (1977) distinguished partially mandated relations as a separate basis of interaction. They suggest such interaction is voluntary, but standardised through some form of formal agreement. Examples of this type of interaction include business organisations which develop relations when agreeing upon a contract, but formalise the relationship once the contract is signed by both parties. It is accepted that relationships of these sort are initiated by one or both parties voluntarily and the organisations involved decide to formalise their relationship for mutual benefit. There is little force involved, however, the agreement makes the relationship more permanent than pure voluntary relations.

The critical aspects of partially mandated relationships is a medium to high degree of autonomy for those involved, a low to medium modicum of permanence of the relationship and only medium to high degree of need for mutual benefit if the relation is to continue.

In exploring the historical context of the nature of the network universities' mandate, the research also aims to test a theoretical proposition within the literature and to examine some weaknesses of the literature.

The proposition is:

Proposition 4: Organisations' perception of whether they are in a voluntary, mandated or partially mandated relationship will influence their behaviour within an interorganisational relationship.

The weakness identified within the literature is that there needs to be further empirical research into the causes and implications of partially mandated relations. Little work has been done on the behaviour of organisations who enter into a relationship voluntarily and then feel trapped by its formal agreement. Similarly, research needs to be done on organisations who feel they enter into a mandated relation voluntarily or who begin a mandated relation with a formal agreement which then
becomes the basis of a mandate and the organisation comes to feel restricted by the mandate.

5.4.2 The Nature of the Network Universities' Mandate

5.4.2.1 Introduction

The mandate of the federated network universities' was the legislation that created them. Australian universities are created by Acts of Parliament and this is traditionally done under State Legislation. Most Australian University Acts are very similar and are based upon a common understanding of what constitutes a traditional university. The University of Sydney Act is an example of the legislation of a traditional university. This research compares the legislation of the federated network universities with the University of Sydney's legislation in order to determine whether there are any differences in the legislation of a traditional university and a federated network university.

This research proposes that the federated network universities' mandate, in the form of their legislation, had a fundamental influence on their network configuration and ultimately the behaviour of the network. The legislation which created the three network universities played a critical role in defining, or not defining, their network configurations. It also played a critical role in determining the degree of autonomy for the member institutions, the perceived permanence of the relationship, and the need for mutual benefit if the relationship is to continue.

The creation of the three network universities provided a challenge for New South Wales' legislators. The network structure was different from the traditional university model and for this reason it was not appropriate to simply copy traditional university legislation and apply it to the network universities. The challenge was to determine how different the network universities would be from the traditional university model and in what aspects. The difficulty was that the network model was new to Australia and it was difficult to foresee how it would operate. The legislators did grasp that governance would play a crucial role in the operation of the new universities but the legislation largely ignored many of the complexities which, it would become apparent, were peculiar to the network structure.

This research proposes that the federated network universities' legislation failed to adequately explain the nature of the mandate. While it established the network universities as mandated networks in the sense that the network members were required by law to interact, it allowed the network members to develop their own interpretation of whether their network university was mandated, partially mandated or voluntary.

The three network universities were created by similar legislation. However, the legislation had several critical flaws. The most fundamental flaws were:
a) it was ambiguous and open to interpretation;
b) the governance structure was left vulnerable to abuse of power from some individuals;
c) it failed to address the complexities of the network structure; in particular, the relationship between the network members and the role of the Office of the Vice-Chancellor;
d) it offered the former college principals important roles in the network structure.

The following analysis will firstly compare the network universities' legislation with the University of Sydney's legislation and will then explore the legislation's flaws.

### 5.4.2.2 Comparison Between the Network Universities' Legislation and the University of Sydney's Legislation

A comparison of the legislation which created the three network universities and the University of Sydney (i.e. the University of Western Sydney Act, the Charles Sturt University Act, the University of New England Act, and the University of Sydney Act) indicates two preliminary findings:

a) There is little or no difference between the legislation of the three network universities.
b) There are only minor differences between the legislation of the three network universities and the University of Sydney legislation.

The following analysis highlights the similarities of the legislation of the three network universities and compares their legislation with the University of Sydney's.

The network universities' legislation includes a brief section on the University Network which, of course, the University of Sydney legislation does not. The reference to the network is exactly the same for each network university except that the names of the network members differ at each university.

The functions of the network universities are exactly the same as that of the University of Sydney except that the network universities have specific responsibilities to serve their local regions. Thus the University of Western Sydney's functions included a reference to West and South-Western Sydney, Charles Sturt University a reference to Western and South-Western New South Wales, and the University of New England a reference to Northern New South Wales. In addition, Charles Sturt University's functions include the provision of distance education. There are two other important inclusions in terms of distinguishing the functions of the network universities from the University of Sydney:

1) Charles Sturt University's legislation includes a reference to the University of New South...
Wales - "the University shall collaborate with the University of New South Wales in the development of academic programs". This suggests Government concern over the quality of academic programs and the need for a "parental" relationship between the new and established university.

2) The University of New England includes a reference to the Orange Agricultural College which requests UNE to maintain Orange as a college of the University.

While the network universities have a Board of Governors and the University of Sydney has a Senate, the only difference between the nature of the membership of the Board or Senate of each university is the inclusion of network member Chief Executive Officers on the Board of the network universities.

The functions of the Chancellor, Deputy Chancellor, and Vice-Chancellor are the same at each network university and the University of Sydney. The only difference between the network universities and the University of Sydney in terms of Officers of the University is the existence of Chief Executive Officers of network members at the network universities. The functions of the CEOs are the same at each network university except for a reference to reporting mechanisms. Part 13.3 of both the Charles Sturt University Act and the University of New England Act reads:

A chief executive officer is responsible to the Board, through the Vice-Chancellor, for the day-to-day management of the network member and has such other functions as are conferred or imposed on the officer by or under this or any other Act.

The University of Western Sydney Act Part 13.4 reads:

A chief executive officer is responsible to the Board, through the Vice-Chancellor, for the day-to-day management of the network member and has such other functions as the Board determines and (subject to any determination of the Board) as the Vice-Chancellor determines.

It is important to note that at each of the network universities, the legislation indicates that the CEOs have responsibility for the day to day management of their network member and the CEOs report through the Vice-Chancellor to the Board. However, the Vice-Chancellor at UWS may determine other responsibilities for the CEOs if they are approved by the Board.

In addition, both Charles Sturt and New England had provision for advisory councils to be established for each network member while Western Sydney did not.

The University of Sydney Act has provision for the establishment of academic colleges. The University's current academic colleges are the Sydney Conservatorium of Music, the Cumberland College of Health Sciences, and the Sydney College of the Arts. The network universities do not have provision for establishing academic colleges. There is provision for new members to be added to the
network, however, these would be granted full network member status. However, New England allowed the joining of Orange Agricultural College as a college of the University.

Other general items are similar for each of the network universities and the University of Sydney.

In conclusion, the legislation of the three network universities is very similar which suggests that they should have developed as very similar organisations. The network university legislation is also very similar to that of a traditional university. There are only minor differences between the legislation of the network universities and that of a traditional university structure which suggests there should be no clear distinction in the operation of a traditional university and a federated network university. This does not conclude that federated network structures are the same as traditional university structures. Rather, it indicates that the legislation was negligent in failing to explain the differences between the two structures.

5.4.2.3 The Ambiguity of the Network Universities' Legislation

The most fundamental flaw in the legislation which created the network universities was that it was ambiguous. The legislation was ambiguous in the sense that it could be interpreted in several ways. However, as we have seen in the previous section, the legislation is very similar to that of a traditional university. It might then be argued that the ambiguity can be ignored because the legislation has not provided problems for traditional universities. However, this fails to grasp two crucial points:

1. The federated network structure is a different structure from the traditional university model and its legislation must reflect these differences. The need for a distinction between the two legislations is critical to the perception of member institutions. The legislation must make it clear to the member institutions that the federated network structure is not a traditional university structure and then explain the key differences.

2. While the legislation of the network universities and traditional universities are similar, there are key differences. These differences are not explained clearly in the legislation. More importantly, they involve the most crucial differences between the federated network structure and the traditional university structure: network member autonomy and the existence and role of network member Chief Executive Officers.

The legislation for traditional university structures is appropriate for new universities which adopt the traditional sense of a university. It is not appropriate for federated network structures because the network is not a traditional university structure. The problem is again one of perception. Those involved in establishing a new university which follows the traditional university model will have a common understanding of the university's structure, governance, and other organisational processes.
They will feel they have an understanding of the structure and, perhaps most importantly, they will share a common understanding of the structure. Those involved in establishing the federated network structures did not understand the structure and, most certainly, they did not share a common understanding of the structure. The most serious failure of the network university legislation was that it did not clearly explain the federated network structure.

Not only did the three network universities disagree in their interpretation of the legislation, each member institution within each of the network universities had a different interpretation of the legislation. The interpretation of the legislation by each network university and by each network member depended upon the perception of the individual or individuals with responsibility for its interpretation. The Vice-Chancellor, Chief Executive Officers, and to a lesser extent the Board of Governors, were the interpreters of the legislation. At each of the network universities, most staff had a poor understanding of the federated network structure. They relied upon their Vice-Chancellor and Chief Executive Officer to interpret and implement the legislation.

Within a few months of operation, each of the network universities found that the ambiguity of the legislation was causing problems. They quickly produced papers which explained their interpretation of the legislation and how the network would work. These papers illustrate the ambiguity of the legislation both because the network universities felt the need to explain the federated network structure and their interpretations of the network differed.

Each of the network universities interpreted the legislation differently. The University of Western Sydney and the University of New England struggled to grasp how the federated network structure would operate while Charles Sturt University had much more success. The reason for this was Charles Sturt adopted a centralised network model which closely resembled the traditional university structure. The centralised model was more easily understood than the federative model pursued by the University of New England or the network member autonomy model pursued by the University of Western Sydney because it resembled the traditional university model. Western Sydney and New England found it difficult to develop a network configuration from the legislation because it did not adequately explain the network structure nor how it would differ from the traditional university structure.

The network universities produced three important papers which attempted to interpret the nature of their mandate and explain the federated network structure. In October 1990, Charles Sturt University's Vice-Chancellor, Professor Blake, presented a paper to the Board of Governors entitled *The Administration of Charles Sturt University - Recommendations to the Board of Governors from the Vice-Chancellor*. At the same time, the University of Western Sydney's Vice-Chancellor, Professor Smith, a paper entitled *The University of Western Sydney: A Review*. The University of New England's network member institutions were involved in a substantial round of negotiation, consultation and discussion before they agreed to join together to form the federated network UNE. These discussions resulted in a paper entitled *Armidale College of Advanced Education, Northern Rivers College of*
Each of these papers were very important because they represented their network university's first attempt to interpret the nature of their mandate and the federated network structure.

While Charles Sturt's paper came some time after the University began, its philosophies had been put in place much earlier. In submitting the paper to the Board, the University's Vice-Chancellor, Professor Cliff Blake, sought endorsement for his interpretation of the network structure. The Paper was Professor Blake's attempt to define the University's network configuration and, in this sense, it outlined how Charles Sturt was to be organised and governed as a federated network university. Western Sydney's paper aimed to review the early performance of the university but its real focus was "to identify those issues we need to resolve and those areas we need to improve in order to strengthen the University." The review of the university's performance suggested that "many of the key issues were related to the expectations and performance of the federated network structure itself." These comments illustrated the importance of the network structure to the performance of the University. They also demonstrated the need for a clearer network configuration. The Vice-Chancellor implied that the University would not realise its full potential until the network and how it was to operate was clearly defined. New England's paper covered all aspects of University operations including governance structure and management; academic integration; academic matters; staffing matters; finance and budget; student matters; administration; libraries; public relations; and strategic planning and evaluation. It aimed to address the issues which needed to be resolved in order to develop an effective federated network structure.

Charles Sturt's paper first outlined membership of the network university:

"Charles Sturt University was formed by the voluntary union of Mitchell College of Advanced Education, in Bathurst and with a study centre in Broken Hill, and the Riverina Murray Institute of Higher Education, with campuses in Wagga Wagga and Albury. Riverina College, the predecessor of Riverina Murray Institute of Higher Education, maintained a study centre at Griffith".

The suggestion that the network members formed a voluntary union is particularly important within the context of whether the network universities were created voluntarily, were mandated or partially mandated. Each of the network members at each of the network universities felt that they entered interorganisational relationships with the other members voluntarily. They felt they were forced by the Federal Government and the White Paper into forming interorganisational relationships with other institutions but they felt they had a choice over which institutions to join with. This is important because the members felt the voluntary nature of their relationship with the other members allowed them some control over the relationship both in terms of deciding to form the relationship and being able to withdraw from the relationship. It also suggests that the network members entered the network willingly.
Charles Sturt's paper then mentioned the Act and its lack of a network configuration:

"It is interesting to note that the Act does not define the terms 'network' nor 'federation', nor does the Act refer to the autonomy of members. On the contrary, the Act provides in section 18 for a single Board of Governors to be the 'governing authority of the university', in Section 16, for a single Academic Senate, which is defined in the By-Law as the 'principal academic body of the University' and in Section 12, for a single Vice-Chancellor to be 'the principal executive officer' and who, by authority of the By-Law is 'responsible ...for the day to day management of the University and in particular for the ...academic, administrative, financial and other business of the University'.

This passage contains all of the key aspects of Charles Sturt's interpretation of the network structure. Professor Blake indicates that network member autonomy was not mentioned in the Act and therefore should be dismissed. He moves to the other end of the network spectrum, the centralised model, and suggests the Act defines the network as a single organisational entity with three key decision making authorities: the Board of Governors, the Academic Senate/Board, and the Vice-Chancellor. He argues that the University should be run as a single organisation because the legislation provides for only one of these three key decision making authorities for the University as a whole. There is not a Board of Governors, Academic Senate/Board, or a Vice-Chancellor at each of the network members. This crucial point provides an insight into Professor Blake's perception of the federated network structure. The key decision making authorities resemble that of a traditional university structure and he felt that this proved that the network university should be managed in much the same fashion as a traditional university structure: from the centre. It is also important to note in Professor Blake's network model, the Vice-Chancellor is responsible for the day to day management of the University. He largely ignores the role of the network member Chief Executive Officers and, in doing so, he ignores the key difference between the federated network structure and the traditional university structure: the role of the Chief Executive Officers and network member autonomy.

Charles Sturt's paper does define the role of the Chief Executive Officers:

"The Act also refers in Section 13 (3) to the Chief Executive Officers of a member being responsible through the Vice-Chancellor for the 'day to day management of the network member'. This management responsibility of a Chief Executive Officer is qualified by:

a) excluding those functions that are prescribed as responsibilities of the Board of Governors, Academic Senate or Vice-Chancellor;
b) the overriding responsibilities of the Vice-Chancellor; and
c) the policies of the University as these restrain management decisions.

It can be reasonably inferred, however, that the Act envisages Chief Executive Officers in particular, but probably other officers as well, having dual responsibilities - line responsibility in areas of policy and procedures to the Vice-Chancellor and in turn, to the Board of Governors, and functional
This accepts that the legislation allocates the Chief Executive Officers day to day management of their network member, however, Professor Blake moves quickly to dilute this authority with several qualifications and the dual responsibility of line and functional management determined by the Vice-Chancellor. Professor Blake reduced the role of the Chief Executive Officers by ensuring they had University-wide responsibilities in addition to their network member role. As the University developed central academic and administrative governance structures, Professor Blake ensured the CEOs focussed more on their University-wide responsibilities and less on their network member. This situation developed to the stage in 1993 where the CEOs had very little involvement in the day to day management of their network members and the Deans had more influence in member management. The devolution of responsibility to the Deans was also designed to retain control at the centre. The Deans were appointed by Professor Blake to manage a coordinated academic governance structure which spread across the University's network members. This structure avoided the problem of Deans having loyalties to individual members rather than the University as a whole.

Professor Blake understood that the most important aspects of the network universities' mandate and the operation of the federated network structure was the role of the Chief Executive Officers and the notion of network member autonomy. His paper focussed on these issues and his interpretation of the federated network structure was based upon reducing the CEOs' member role. However, neither the University of Western Sydney nor the University of New England adequately addressed the role of the CEO or network member autonomy. Both Western Sydney and New England focussed on structural and functional issues which suggested neither had determined their definition of the network structure.

Charles Sturt's paper provided the following definition of the federated network structure:

"Accepting these statutory limitations and recognising the geographic separation of the Members, the Board of Governors deems the University to be a single legal and administrative entity, whose constituent parts (called Members) are joined in an inter-connected system (called network) by academic and administrative procedures which enable the Members to interact, share resources and participate in cooperative activities to their mutual benefit and the greater benefit of the University, its staff, students and communities. Indeed, it is by this interaction, sharing and participation in cooperative activities that the potential strength of the University can be more than the aggregation of the strengths of each Member. These networking arrangements enable the University to function as a union of several Members (called Federation). In such a federation, the Members, in the interests of efficiency and effectiveness, agree on those functions that should be handled at one Member on behalf of all Members and on those functions that can be replicated at more than one Member without loss of efficiency. This to me is the essence of 'federation'".

The paper was discussed by the University's Board of Governors at its meeting at the University of New
South Wales, Kensington, on November 14, 1990. This was the first meeting of the University’s new Board of Governors. In speaking to his paper, Professor Blake suggested his proposals "emphasised the oneness of the University, building something that is academically credible and cost efficient". Following comment from Board members, the Chancellor, Mr David Asimus said he "supported the document but added it was important to move quickly towards achieving cohesiveness". He said the structure "will enhance academic performance and will also allow the Board of Governors to meet its responsibilities". The three Principals (CEOs) gave support to the document, describing it as thorough and illustrating what had to be done.

Professor Blake's comments about the "essence" of a federation which focussed on integration, unity, and cost-efficiency, and the subsequent Board of Governors discussion which emphasised cohesiveness, shows how Charles Sturt University had interpreted the federated network structure as a centralised model and the University wanted to operate as a single organisation. It accepted that the federation was a "union" of several members but it wanted to integrate this union in order to remove duplication and other inefficiencies.

The University announced that a number of senior officers would assume University-wide responsibilities. Professor Blake felt this was an important strategy "for building a cohesive and stable institution, the Members of which are more likely to enjoy mutual confidence and trust. It is also an effective way to decentralise the administration of the University without loss of efficiency".

Western Sydney's paper raised three critical issues explicitly and two implicitly. The explicit issues were:

1. The need to define the federated network structure.
2. The need to decide whether the federated network was the most appropriate structure for the University.
3. If appropriate, the need to determine how the federated network structure was to operate.

The implicit issues were:

1. The question of Member autonomy.
2. The questions of efficiency and effectiveness in the university.

However, the paper did not adequately address the need to define the federated network structure. It focused almost exclusively on structural and functional issues by concentrating on the problems associated with duplicated administrative systems and with the roles of the Office of the Vice-Chancellor, the network members, the Board of Governors and the Academic Board. The Paper indicated that the University was beginning to grasp the underlying dynamics of the relationships within the federated network structure but that there were many unresolved issues which still needed to be clarified.
A paper entitled *The University of Western Sydney’s Federated Structure* was released in February 1991. It was the University’s first successful attempt to define the network structure because it tried to explain the dynamics of the relationships between centrality and member autonomy. It emphasised member autonomy while acknowledging the importance of the role of the Office of the Vice-Chancellor. The most important issue raised by the paper was the tension or pressures to act jointly. The paper makes it clear that discussions on joint action should not be undertaken simply for its own sake but that the test should always be whether the joint action increases the ability to achieve the university’s mission. Implicit in this statement is the understanding that members will undertake to achieve their objectives independently, efficiently and effectively and will only collaborate when it will increase either their own or the University as a whole’s ability to achieve the organisation’s objectives. In other words, members will undertake to achieve their objectives interdependently only when the pressures for joint action outweigh the pressures for autonomy. Implicit also is the University’s mission statement which focuses on the provision of higher education for Sydney’s West and South-West. Much of the Paper reinforces and clarifies the role of the members and the Office of the Vice-Chancellor. The Paper also filled a void by providing a rationale for the federated network structure. It presented seven key points which explain why the University considered the federated network is the most appropriate structure for the University.

* There are clear historical and geographical reasons based on Greater Western Sydney and South-Western Sydney being made up of three identifiable corridors each of which is served by one of the three University Members.
* The size of the region served by the University which presents particular transport problems and also ensures that separate community allegiances remain.
* Academic initiative is facilitated by a decentralised structure.
* The members have discipline specialties and strengths which should be retained and further developed.
* Commonwealth Government policy and trends in contemporary organisation theory have moved towards decentralised structures.
* There are obvious opportunities for members to cooperate in key areas.
* There are political forces from both the Commonwealth and State Governments.

The paper concluded that there are "tensions which need to be in balance for the University of Western Sydney to continue to build on its excellent achievements to date." The acknowledgment of these tensions was evidence that the University had begun to develop its network configuration.

The University of New England’s paper focussed upon the relationship between the Office of the Vice-Chancellor and the members and between the members themselves. The Agreement between the "amalgamation partners" (network members) stated:

*The consolidated university will have a structure which reflects its multi-campus nature but with a
single Council, Academic Board and Vice-Chancellor. The Vice-Chancellor will be the Chief Executive Officer of the consolidated university and will not simultaneously act as senior executive officer of a single campus.

This indicates:

a) that the Amalgamation Committee understood that the multi-campus nature of the University would have important implications for its organisational structure; and

b) that the Vice-Chancellor could not have a dual role as CEO at one of the Members.

The second point provides an important insight into the attitudes of those involved in the Agreement. It suggests that some felt it necessary to ensure that the Armidale and Northern Rivers Members began as equal partners. The implication is that the former UNE might have wanted to assume a senior partner role within the network structure over the former Northern Rivers CAE. This would certainly have been the case if the UNE Principal had been appointed to the dual role of Vice-Chancellor and Chief Executive Officer at UNE, Armidale or if an outside person had been appointed to the same dual role. The move to ensure that the CEOs at UNE, Armidale and UNE, Northern Rivers were both given the equal status of Deputy Vice-Chancellors, reporting to a Vice-Chancellor responsible for the University as a whole, assisted the perception that the two network members were equal partners in the network structure.

The paper indicated that following amalgamation, the university would "review the full range of existing management, academic and administrative structures. It will develop new structures, or modify the existing structures, in accordance with its mission". ibid. This also supports the proposal that the University understood a) that a new structure or configuration would need to be developed for the University and b) that the University would itself need to determine the nature of the structure.

The Amalgamation Report tried to grasp the nature of the federated network structure by focussing on the decision making functions outlined in the legislation. It suggested that the legislation provided the following recommendations on governance, structure and management:

* devolving significant responsibility and authority for operational matters to the University network members;
* concentrating responsibility for University policy, planning, evaluation, relations with government and the external world generally, and accountability for the functions of the university in the Board of Governors, Academic Senate, and Vice-Chancellor's Office;
* providing coordination of academic activity through a single Academic Senate and its committees;
* providing a source of advice about the development of the network members through the creation of Advisory Councils;
* developing effective processes and structures for:
-approving institutional policy and ensuring institutional accountability,
-developing academic policy,
-policy implementation and management.

In terms of functional responsibility, this is a reasonable attempt at beginning to develop a network configuration. It focuses on network member autonomy and indicates that the member institutions, at that stage, were interpreting the federated network structure somewhere between the centralised model and the network member autonomy model on the network spectrum. The broad policy and government representation role of the Board and the Vice-Chancellor and the academic activities responsibility of the Academic Senate resemble the network member autonomy model adopted by the University of Western Sydney more than the centralised model adopted by Charles Sturt.

The Amalgamation Committee suggested that "a clear distinction in the following three elements of institutional operations should be fundamental to the new university":

a) The Board of Governors should be responsible for determining broad institutional policy and accountability.

b) The Academic Senate should be responsible for determining academic policy, and for the coordination of academic policy and programs throughout the university.

c) The development of strategic planning and the implementation of policy should be conducted by the Vice-Chancellor and other officers throughout the University exercising powers and authorities devolved from the Board of Governors or by legislation".

This appears to make clear the distinction between the three main decision making spheres of broad policy, academic policy and planning. However, the recommendations do not take into account the complexities of the federated network structure, particularly how the question of network member autonomy would be resolved within the context of these three spheres. The Amalgamation Committee did hint at the tensions which would emerge when it said:

"The Committee acknowledges that there should be a good deal of interaction between these three streams of authority...but it also believes that the objectives of sound governance, good management and participation of academic staff in determining academic policy are best served by a clear, formal definition of the specific functions of the various officers and groups which share in decision-making, management and policy implementation".

The suggestion of the need for a "clear, formal definition" of decision making functions alludes to the need for a visible network configuration.

The anomaly of the federated network structure is that it aims to preserve the identity and autonomy of the Member institutions but needs also to ensure that the organisation is one single entity. Australian universities have one Vice-Chancellor, one governing board, and one funding allocation. The Federal
Government wanted to deal with the network universities in the same way it dealt with all other Australian universities. It did not want to deal with the network’s constituent parts and therefore wanted to consider the network universities as single organisational and legal entities. However, the network also involved the confusing notion of member autonomy.

These comments explain a great deal about the reasons why each of the federated network universities interpreted the network structure differently and developed different network models. The different interpretations of the federated network structure were a result of ambiguous legislation, the history of the member institutions and their decision making in the period following the White Paper, and the role of the Chief Executive Officers in maintaining or relinquishing their network member's autonomy. These factors had an important influence in the interpretation of each network university’s network configuration.

5.4.2.4 The Governance Structure Outlined By The Network Universities' Legislation

A fundamental flaw of the network universities' legislation was that it failed to clearly explain the federated network's governance structure. Governance is an important factor in both the visible and invisible network configuration of the federated network structure. It influences both the interpretation and operation of the network structure. Governance is so important because it influences the two most powerful forces within the federated network structure: network member autonomy and the political economy (the pursuit of funds and authority). The legislation failed because it did not clearly explain who reports to whom nor the functions and authority of each of the networks' decision making groups or individuals. The legislation's negligence was made worse by the fact the interpreters of the legislation, the Vice-Chancellor and Chief Executive Officers, had most to gain or lose by the governance structure.

Part 2 of the network universities' legislation, Constitution and Function of the University, said little about governance structures other than to list membership of the university network. Part 3, the Board of Governors, Authorities and Officers of the University, simply listed the membership of the Board of Governors. The only points of interest are the inclusion of network member Chief Executive Officers as members on the Board and a brief passage on the functions of the CEOs which states:

(3) A chief executive officer is responsible to the Board, through the Vice-Chancellor, for the day-to-day management of the network member and has such functions as are conferred or imposed on the officer by or under this or any other Act.

The inclusion of the CEOs on the Board of Governors and allocation of day-to-day management of the network member to the CEOs are perhaps the two most important points in the legislation. These two
points effectively distinguished the legislation of the network universities from that of traditional universities. They, more than any other part of the legislation, defined the federated network structure and made it different from a traditional university structure because they made provision for network member autonomy and granted the CEOs almost equal status with the Vice-Chancellor. These two points were a main cause of interorganisational conflict within the network universities' federated network structure as the CEOs used their status and power to pursue funds and authority within the network structure's political economy.

The legislation largely avoided the issue of the role of the CEOs, and its potential problems for the network structure, by passing responsibility onto the Board of Governors. In part 4, Functions of the Board, it stated that the Board is responsible for:

(a) the coordination of the use of the University's resources, including the monitoring of the efficiency and effectiveness of network members in their use of resources;
(b) the distribution, among network members, of the income of the University;
(d) the definition of the areas and responsibilities of the network members with respect to teaching, research and consultancy.

However, as the three network universities developed it became clear that the Board played a minor role in the coordination of the University's resources; a "rubber stamp" role in the distribution of resources; and had little influence on the definition of responsibilities. The governance of all three of these key decision making areas were determined by the Vice-Chancellor at Charles Sturt and by the Vice-Chancellor and his CEOs at Western Sydney and New England. The governance structures were, in turn, influenced at each network university by the Vice-Chancellor and the Chief Executive Officers' interpretation of the federated network structure.

The governance structures of each of the network universities will be analysed in detail in chapter six. At this stage of the research, it is important to note that the legislation allowed each network university to place its own interpretation on the federated network's governance structure. It is equally important to note that each network member within each network university developed its own interpretation of the governance structure.

The University of Western Sydney as a whole interpreted the network's governance structure as allowing for network member autonomy. While the network members and their CEOs were accountable through the Vice-Chancellor to the Board of Governors, it was understood that each CEO would have substantial autonomy in the day to day operation of their network member. The key decision making authority retained by the Vice-Chancellor, and to a lesser degree the Board of Governors, was the allocation of resources. The network universities are considered single legal entities by Government and are allocated a single operating grant. The university must then decide how to spend these funds which is a decision involving what proportion of these funds should go to each network member. This decision was essentially made by the Corporate Management Team which
comprised the Vice-Chancellor and his three CEOs. Therefore, while the key decision of resource allocation was retained by the Vice-Chancellor, it involved the CEOs in direct competition for funds which, in turn, created problems within the network's political economy.

Charles Sturt University as a whole interpreted the network's governance structure as being almost identical to that of a traditional university structure. The real decision making authority was held centrally by the Vice-Chancellor. The network members were considered organisational components of the University and the University was considered to be a single legal entity. The network members had limited autonomy and, as the network developed, the members were not even considered to be network members, rather they were called campuses of the University. All key decision making, including resource allocation, was retained centrally by the Vice-Chancellor. While network member CEOs were given nominal responsibility for management of their campuses, they were given University-wide responsibilities and were encouraged to consider the University first and their campus second.

The University of New England as a whole interpreted the network's governance structure as providing for network member autonomy. The difficulty was that the network members had vastly different views on the degree of member autonomy for the other network members. The former UNE saw itself as having a senior role within the network's governance structure and therefore having a major influence on decision making. Northern Rivers saw itself as an equal partner within the governance structure and therefore having an equal influence on decision making. The University's interpretation of the legislation was to provide each network member with equal status. This resulted in equal representation on each decision making group (eg the Board of Governors and the Academic Board) which created problems within the network's political economy because each network member could compete for funds and authority on equal terms.

The legislation's major failure in terms of the federated network's governance structure was that it did not clearly enough explain the role of the decision making bodies and their decision making powers. The legislation was particularly negligent in failing to adequately define the roles of the Vice-Chancellor, Deputy Vice-Chancellors/Chief Executive Officers and the Board of Governors in particular. The legislation failed to distinguish between university-wide responsibilities and the need to maintain network member autonomy. It failed to resolve the duplicated, and often contradictory role, of Deputy Vice-Chancellor and network member Chief Executive Officer. This dual role created problems within the network structure's political economy because at the University of Western Sydney and the University of New England in particular, the Chief Executive Officers were confronted with the conflicting and often contradictory problem of whether to support the University as a whole or their network member on almost all key decisions, particularly resource decisions. Charles Sturt University largely resolved this problem by removing the role of network member Chief Executive Officers, calling them Deputy Vice-Chancellors, and allocating them key University-wide responsibilities.
5.4.2.5 The Network Universities' Legislation's Definition of the Network Structure

The legislation stated little about the federated network structure other than that the network universities would be a federation and listing the members which comprised the federation.

The legislation's only direct reference to the network structure comes under part 2 section 6:

University Network

6. (1) The University network is a federation of:

(a) the University of Western Sydney, Hawkesbury;
(b) the University of Western Sydney, Macarthur;
(c) the University of Western Sydney, Nepean; and
(d) such other network members as may be established from time to time under this section.

There are further brief references to the Governor's powers to establish an other institution(s) as part of the University network.

The legislation failed to mention how the federated network structure should operate. Its only indirect references to the network's operation were comments about network member autonomy and the role of the CEOs. Other implicit references were limited to brief details on the roles and responsibilities of the Board of Governors and Academic Board.

The fact that the federated network structure was almost completely ignored by the legislation was critical because the structure had never before been attempted by an Australian university. A better understanding of the structure would have ensured that its complexities were explained by the legislation. This research proposes that the failure to provide a visible or invisible network configuration was a result of the legislation's failure to understand the network structure. There were three areas which were critical to the network structure which were not adequately addressed by the legislation:

1. The relationship between the network members and between the network members and the Office of the Vice-Chancellor.
2. The degree of network member autonomy
3. The role of the Chief Executive Officers, particularly the distinction between the dual role of Deputy Vice-Chancellor and member Chief Executive Officer.

These three issues would play a crucial role in the success or failure of each of the network universities. They were critical to each network universities' interpretation of the federated network
structure and to the political economy within the network structure.

5.4.3 Conclusions

The analysis provides some support for proposition 4. Certainly the network university members had different interpretations of whether they were involved in a voluntary, mandated or partially mandated relation. The Charles Sturt University members felt they were in a mandated relation and expected the network's interorganisational relationships to provide a low degree of member autonomy, a high degree of permanence, and a reasonable necessity for mutual benefit. This influenced their behaviour within the network's interorganisational relationships because they accepted the centralised network model, relinquished member autonomy, and allowed the network's political economy to operate centrally and be controlled by the Office of the Vice-Chancellor. The University of Western Sydney members varied in their interpretation of the legislation. Hawkesbury felt it was in a mandated relation and had similar expectations as the Charles Sturt members. However, Nepean, and Macarthur in particular, felt they were in a partially mandated relation and expected the network's interorganisational relationships to provide a high degree of member autonomy, a medium degree of permanence, and a high degree of necessity for mutual benefit. This influenced their behaviour within the network's interorganisational relationships because they developed the network member autonomy model, and pursued member autonomy, funds and authority within the network's political economy. The University of New England members also varied in their interpretation of the legislation. However, their different interpretations caused more problems than at either of the two other network universities. Armidale and Orange felt they were in a partially mandated relation and expected the network's interorganisational relationships to provide a high degree of member autonomy, a medium degree of permanence, and a high degree of necessity for mutual benefit. Northern Rivers felt it was in a voluntary relation and expected a high degree of member autonomy, a low degree of permanence, and a high degree of necessity for mutual benefit. These behaviours were illustrated by the network universities' early papers interpreting the nature of the mandate and the operation of the network structure and their governance structures. This suggests that organisations' perception of whether they are in a voluntary, mandated or partially mandated relationship will influence their behaviour within an interorganisational relationship.

In terms of the weakness identified within the literature, there is support for the proposition that there needs to be further empirical research into the causes and implications of partially mandated relations. The analysis has shown that the nature of the mandate can cause problems by allowing for different interpretations of whether the relation is voluntary, mandated or partially mandated. Chapter six will show how the weaknesses of the network universities' legislation contributed to the behaviour of network members who felt they had entered into the network voluntarily and then felt trapped by its mandate. Similarly, it explores the behaviour of members who felt they entered into a mandated
relation voluntarily, or who began a mandated relation with a formal agreement which then becomes the basis of a mandate, and then became frustrated by the mandate.

5.5 The Federated Network Structure

5.5.1 Theoretical Overview

The study of federated network structures is found within operational definitions of interorganisational relations. Networks are one of four forms of dyadic interorganisational interaction: the others being dyadic linkages, action sets and organisation sets. Federated networks are a unique type of interorganisational linkage network. The importance of control is the principal way of distinguishing between a federation and other types of linkage networks.

There are numerous definitions of network structures within the literature. Most focus on interaction processes, however, this research rejects this approach as being superficial and failing to take into account the underlying complexities inherent in the network structure. The following definition is proposed as a basis for the discussion which follows. It takes into account theoretical frameworks drawn from Raelin (1980), Provan (1983), Stern (1981) and Benson (1975).

A federated network structure refers to a group of organisations that have formed interorganisational relationships, and can be recognised as a bounded interorganisational system, in order to achieve both mutual and interdependent goals which they could not have achieved as independent organisations. The principle distinguishing feature of federated network structures from other network structures is the network members' control and management over their own interorganisational activities. The degree of member control will play a crucial role in the nature of the federated network and is largely determined by the network's mandate, or if the mandate is unclear, the members' interpretation of the mandate. A dominant feature of the underlying complexities of interorganisational relationships within federated network structures is the political economy; more specifically, the pursuit of funds and authority. Interorganisational activity within a federated network structure is a function of the historical development of relationships as well as current structural characteristics, and, the strength of the federated network structure depends on the processes that link network structure to the interests of the organisations in the network. The performance of the whole of a federated network structure should exceed the individual performance of its network members or the network should be disbanded.

The concepts within this definition will be used as the research's basic theoretical framework. The main
theoretical construct used in the research's analysis of federated network structures is the concept of control; more specifically, the degree of network member control and management of their interorganisational activities within the federated network structure compared with other network member control and the central coordinating agency's (the Office of the Vice-Chancellor) control.

The analysis of the network universities' initial interpretation of the federated network structure which follows will use four theoretical frameworks:

1. Provan's (1983) distinction between participatory, independent, and mandated networks;
3. Benson's (1975) political economy;

The analysis also includes a brief overview of the advantages and disadvantages of the federated network structure and the concept of synergy.

Provan (1983) suggests that only when federation membership is mandated by law does exchange theory break down. It is here that the basis for distinguishing between federated networks and other types of networks lies. The degree of control desired by the network members and the degree of control granted by the members to the coordinating agency determines the nature of the network and distinguishes the federated network from other linkage networks. This point is best explored through Provan's identification of three distinct types of federations: participatory, independent or mandated network.

Provan suggests that when organisations are involved in an explicit, cooperative, non-federated linkage arrangement described as a coalition, they interact directly with each other for purposes of managing their interdependence. Under these conditions, control of resource flows still reside with the linked organisations themselves. In contrast, in any type of federated network, the flow of at least some of the resources needed by members is controlled by the central coordinating agency. The distinguishing feature is the control of resources by the central coordinating agency which gives it a certain power or authority within the network.

Another way of looking at federated network structures is to consider them as part of a network spectrum. Harman and Meek (1988) developed the concept of a network continuum by defining amalgamations along a spectrum from a very loose voluntary cooperative agreement to a complete integration leading to a new unitary institution.

At the far left of the spectrum, is the voluntary cooperative agreement between two or more institutions. Such agreements may be enacted by the simple exchange of letters between institutional heads, or they may take the form of formal, legal agreements. Next comes the formalised consortium which is usually formed to provide a common service to participating institutions. But with such
arrangements, apart from the agreed area of common activity, the participating institutions are able still to pursue essentially autonomous directions. Moving along the continuum, the next type of organisation arrangements is the federation. With the federation, responsibility and authority are divided between the participating institutions and some new over-arching central body. The particular arrangement may take a number of forms, but the most common pattern is the imposition of a super governing body and central administration, or the establishment of a coordinating council of heads of institutions, that coordinate the joint activities. With a federal structure, powers and responsibilities at both individual institutional level and central level are usually clearly specified. At the far right of the continuum is linkage through establishment of a new unitary organisation.

Amalgamations come in a wide variety of forms and patterns. To help make sense of the diversity, Harman and Meek suggested a few basic distinctions. The first is between voluntary and involuntary amalgamations. A voluntary amalgamation is when two or more institutions initiate amalgamation themselves, rather than the impetus coming from outside, whereas involuntary amalgamation is where a merger is forced on institutions by some outside body. Most amalgamations in Australian higher education over the past decade have been basically involuntary resulting from government pressure, the University of Wollongong being the exception. Second, amalgamations can be divided into consolidations and acquisitions, based on whether one participating institution continues largely unaffected and absorbs the other or others, or whether the result is the emergence of a new institution. A third distinction is between mergers of institutions in the one sector of tertiary education, and cross-sectoral amalgamations. Cross-sectoral amalgamations, whether they be university-CAE or CAE-TAFE pose special problems, not only at institutional level, but also at system level, particularly with regard to matters such as funding, coordination and course accreditation. Fourth, it is useful to distinguish between amalgamations of institutions covering similar academic fields and amalgamations of institutions with different interests. The first of these could be called horizontal mergers and the second vertical mergers. Fifth, distinctions can be made on the basis of the number of institutions being combined. Two institution mergers have been the most common. Almost without exception, mergers which involve more than two institutions have been consolidations rather than acquisitions.

Harman and Meek's work provides a very useful framework for the analysis of federated network structures and the amalgamations involving the three network universities. This research has extended the network spectrum to include three variations of the federation mode: the network member autonomy model located towards the left of the federation's position on the spectrum; the federative model as a balance between the network member autonomy and central control, and the centralised model located towards the right of the federation's position on the spectrum. With these revisions, Harman and Meek's spectrum becomes:
A third way to look at federated network structures is as a political economy. The political economy is drawn from the resource-dependence perspective of Interorganisational Relations. It is largely based upon work by Benson and its theoretical constructs are derived from a political framework. The political economy explains how organisations seek resources within the interorganisational relationships of a federated network structure.

Benson introduced the concept that interorganisational networks may be conceived as a political economy concerned with the distribution of two scarce resources, money and authority. Benson argues that organisations, as participants in the political economy, pursue an adequate supply of resources. The flow of resources into the network depends upon developments in the larger environment. Benson suggests that in the analysis of interorganisational relations, the basic unit of analysis is the network of organisations. Such a unit consists of a number of distinguishable organisations having a significant amount of interaction with each other. Such interaction may at one extreme include extensive, reciprocal exchanges of resources or intense hostility and conflict at the other. Benson suggests that the interorganisational network may be analysed in terms of two related, but partially autonomous, sets of concepts. Analysis may be focused on interaction patterns concerned with the actual performance of core functions or purposes of the organisation. Benson argues that analysis of relations of this kind has been the predominant concern of interorganisational analysts. The second, deeper mode of analysis is focused on the processes of resource acquisition, that is, the activities undertaken by organisation participants in pursuit of an adequate supply of organisational resources. It is this second mode of analysis that this research focuses upon.

Benson suggests that "organisation decision makers are oriented to the acquisition and defence of a secure and adequate supply of these resources. Decision makers also seek authority for the legitimization of activities, the right and responsibility to carry out programs of a certain kind, dealing with a broad problem area or focus." He concludes that a fundamental aspect of the political economy of interorganisational relationships is the need for funds and the authority to use those funds autonomously.

The network configuration is drawn from the operational definitions of interorganisational relations. The study of operational definitions involves theorists who consider interorganisational relations in terms of the various forms of interorganisational linkage. Boje and Whetten (1981) developed the theoretical framework of the network configuration which explains the dynamics underlying the relationships between network members in interorganisational network structures. They suggest that a failure of networks is that they often begin without a clear network configuration. Much of the problems which emerge within network structures are the result of an unclear network configuration or
a difference in understanding of the configuration amongst network members.

There are two types of network configuration: the visible and the invisible. Both refer to how the network is organised. The visible configuration refers to the formal structure of the organisation; its forms of governance, decision making; roles and responsibilities; and organisational hierarchy. It is the traditional concept of organisational structure and control which is commonly plotted on diagrams or organisational charts in terms of boxes and arrows. It indicates who reports to whom. The invisible configuration refers to that which cannot be plotted on paper. It refers to relationships within the organisation. The invisible configuration is especially important within federated network structures because it explains interaction within the network in terms of the pursuit and funds and power.

In exploring the historical context of the network universities' initial interpretations of the federated network structure, the research also aims to test a theoretical proposition within the literature and to examine some weaknesses of the literature.

The proposition is:

Proposition 5: If a federated network structure begins without a formally agreed upon network configuration, network members will be forced to construct their own configuration.

The weakness identified within the literature is that there needs to be further empirical research into interorganisational relationships within federated network structures. There is a particular need to explore the dynamics of the political economy within federated network structures and its implications for the network's interorganisational relationships. There is also a need to examine whether there is an association between the historical reasons for relationships forming, the nature of the mandate, and the members' interpretation of the federated network structure.

5.5.2 Participatory, Independent or Mandated Networks

The legislation which created Australia's three network universities did not define the degree of control of three fundamental forces within the federated network structure:

1. The control and management of the network members over their day to day operations.
2. The control given to the coordinating agency (the Office of the Vice-Chancellor).
3. The control of the external agency (Government) over the network.

The degree of control along these three dimensions defines the federated network structure and distinguishes each network's interpretation of the federated network structure. The three network
universities interpreted the legislation differently and in doing so developed different interpretations of the federated network structure based upon the degree of control allocated to the three network forces outlined above. However, perhaps even more importantly, the network members within each university entered into the network with different interpretations of the degree of control allocated within the network structure.

The University of Western Sydney, as a whole, began with an anticipation that the network would be a participatory federation. They felt the network would involve strong relationships between the network members and the coordinating agency (Office of the Vice-Chancellor), strong relationships between the network members and the external agency (Government), and moderate relationships between the network members. It was expected that the network members would have a high degree of control over the day to day management of their member, the Office of the Vice-Chancellor would have a low degree of control within the network structure, and Government would have a moderate degree of control because it was the major provider of funds. The members anticipated that they would operate as separate organisational entities, the Office of the Vice-Chancellor would provide a coordinating service to provide network benefits for the members, and Government would maintain a distance appropriate to the need for resource allocation and performance monitoring.

However, UWS, Hawkesbury had anticipated that the network would be closer to a mandated federation. It understood there would be network member autonomy but it anticipated a stronger role from the Office of the Vice-Chancellor and a more centralised structure. UWS, Macarthur and UWS, Nepean entered the network with the objective to maintain their autonomy and obtain a high degree of member control within the network. They saw the permanency of the mandate as being directly linked to the benefits it provided for their network member.

This research has labelled the University of Western Sydney's definition of the federated network structure the network member autonomy model.

Charles Sturt University, as a whole, began with an anticipation that the network would be a mandated federation. They felt the network would involve strong relationships between the network members and the coordinating agency (Office of the Vice-Chancellor), strong relationships between the network members and the external agency (Government), and weak or little relationships between the network members. The weak relationship between the network members was in the sense that they relied upon the Office of the Vice-Chancellor to maintain member relationships within the network structure. Charles Sturt felt that the members ceased to exist as separate organisational entities once they joined the network and that they were simply part of one larger organisation. The general feeling was that the network members would have a low degree of control over the day to day management of their member, the Office of the Vice-Chancellor would have a high degree of control within the network structure, and Government would have a strong degree of control because it was the major provider of funds. It was anticipated that the network members would operate as part of one organisation, the Office of the Vice-Chancellor would provide a strong leadership and management
role for the members, and Government would maintain a reasonably close relationship in terms of resource allocation and performance monitoring.

Charles Sturt's members were formerly small rural colleges with little prospect for growth or increased Government funds. Charles Sturt provided them with many benefits including university status and moderate growth. There was an acceptance by the members that the federated network provided them with a more positive future then if they remained independent institutions. The members also accepted that there was little prospect of gaining sufficient size to seek independence which helped develop a commitment to integration and a degree of permanence in the university's interpretation of its mandate.

This research has labelled Charles Sturt University's definition of the federated network structure the centralised network model.

The University of New England, as a whole, began with an anticipation that the network would be an independent federation. They felt the network would involve strong relationships between the network members and the coordinating agency (Office of the Vice-Chancellor), moderate relationships between the network members and the external agency (Government), and weak relationships between the network members. The members felt that they would have a high degree of control over the day to day management of their member, the Office of the Vice-Chancellor would have a low to medium degree of control within the network structure, and Government would have a moderate degree of control because it was the major provider of funds. The members anticipated that they would operate as separate organisational entities, the Office of the Vice-Chancellor would at times provide a leadership role and at times a coordinating service to provide network benefits for the members, and Government would maintain a distance appropriate to the need for resource allocation and performance monitoring.

The problem at the University of New England is that the two main network members, UNE, Armidale and UNE, Northern Rivers, entered into the network with very different interpretations of the legislation and very different understandings of the network structure. A fundamental basis of these different perceptions was the degree of control within the network structure. The difference in perception was not so much along the three dimensions outlined above rather it focussed on the degree of control of the two network members within the network. Armidale assumed it would be the senior partner within the network structure and that it was to play a parental role in guiding the former CAE to university status. Northern Rivers felt that it was entering the network as an equal partner with the same status and degree of control as Armidale. This caused much of the interorganisational conflict between the members which will be examined in chapter six.

There were two peculiar incidents just prior to the passing of the legislation which made the University of New England a federated network university and both had an important influence on the nature of the mandate and the members' interpretation of the federated network structure. The first incident was
an apparent change of mind in the nature of the legislation. Armidale had believed that it was to be the
senior partner within the network structure and understood the legislation would reflect this. This
research's interviews at UNE found that Metherell had promised Northern Rivers equal status within
the new university and, to the surprise of those at Armidale, ensured the legislation reflected this. The
second incident was a further promise by Metherell to Northern Rivers that its membership of the new
university was not permanent. Indeed, Metherell promised that if the member grew at a reasonable
rate, it could establish itself as an independent university by the late 1990s. These two incidents had
important affects on the university's interpretation of the network structure and, in particular, on the
permanency of its interorganisational relationships.

This research has labelled the University of New England's of the federated network structure the
federative model. However, as chapter six will show, the university moved towards the network
member autonomy model as its interorganisational relationships deteriorated.

5.5.3 Network Spectrum Continuum

Federated network structures are located in the middle of Harman and Meek's network spectrum
between the loose relationship of the formal consortium and the integrated relationship of the unitary
institutions. This research proposes three sub-sets of the federated network structure: the network
member autonomy mode, the federative model, and the centralised model. The three network
universities interpretation of the federated network structure are located on Harman and Meek's
spectrum continuum in the following way:

<table>
<thead>
<tr>
<th>Voluntary Cooperative Agreement</th>
<th>Formal Consortium</th>
<th>Federated Networks</th>
<th>Unitary Institutions</th>
</tr>
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<tbody>
<tr>
<td>Member Autonomy Model</td>
<td>Federative Model</td>
<td>Centralised Model</td>
<td></td>
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<tr>
<td>UWS</td>
<td>UNE</td>
<td>CSU</td>
<td></td>
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</table>

The University of Western Sydney's model was to the left of the federated network's position on the
spectrum and is described as the network member autonomy model. It provided for network member
autonomy within the federated network structure and had more in common with the voluntary
relationships of voluntary, cooperative agreements and formal consortiums.

The University of New England fluctuated in its interpretation of the network structure more than either
of the other two network universities. UNE began with an anticipation of central control by the Vice-
Chancellor, and to a lesser degree UNE, Armidale, and thus it more closely resembled the centralised
model. It quickly grasped that UNE, Northern Rivers would not tolerate central control at Armidale and
moved towards a federative model which allowed a balance of central control and network member
autonomy. However, the arrival of Professor Smith as Vice-Chancellor saw a change in its interpretation as, faced with the frustration of the political economy, he sought to develop a "devolved autonomy model" which resembled the member autonomy model. These fluctuations place UNE somewhere between the central model and the member autonomy model in the middle of the federated network's position on the spectrum.

Charles Sturt University's model was to the right of the federated network's position on the spectrum and is described as the centralised model. It provided for central control of the network and low network member autonomy and had more in common with the unitary institutions.

Harman and Meek also analysed amalgamations in terms of voluntary and involuntary amalgamations. Involuntary amalgamations are forced upon the institutions by an external authority while voluntary amalgamations are when the institutions initiate the amalgamation themselves. The distinction between the two types of amalgamations have important implications for the relationship between the institutions involved. Harman and Meek's framework resembles the distinction between mandated, partially mandated and voluntary interorganisational relations. If the relationship is mandated or involuntary, the institutions can feel forced into forming relationships with the other institution(s). While under these circumstances, the external authority can impose a degree of permanence on the relationship, the institutions may feel reluctance or even rebellious towards forming the relationship. Organisations involved in forming involuntary relationships enter the relationship with more enthusiasm and commitment if they feel they still have a degree of control within the relationship. Alternatively, if the relationship is voluntary, the institutions enter the relationship with a strong feeling of control and power over their activities. They enter the relationship with enthusiasm and commitment because they feel they have made their own decision to begin the relationship and its voluntary nature implies that they made the decision for their own benefit. Partially mandated relations involves the situation where the relationship is mandated but the institutions involved feel it is voluntary. Under these circumstances, the institutions feel they had the power to decide which organisations they formed relationships with even though the relationship was mandated by an external authority.

The three network universities' member institutions would, generally speaking, consider their decision to join together to form their respective universities to be partially mandated. The relationships were involuntary because the institutions had little choice but to merge with another or other institutions in order to join the UNS. The Federal and State Governments provided the mandate to form the relationships which were binded by legislation. However, the member institutions largely felt that they had a choice over which institutions to join with. Government tried to impose amalgamation onto the members, (the University of Sydney for UWS's members and the University of New South Wales for CSU's), but did not succeed. The members had the final decision and in this sense they felt that it was voluntary.

Harman and Meek's next framework was to analyse amalgamations in terms of whether they were consolidations or acquisitions. The University of Western Sydney and Charles Sturt University were
consolidations in the sense that the result of the amalgamation of the member institutions was a new institution. However, the federated network university consolidations maintained the identity of the member institutions as well as created a new institution. The University of New England was also largely a consolidation. However, UNE's amalgamation differed from UWS and CSU in two ways. Firstly, it involved an acquisition whereby the former Armidale College of Advanced Education was completely absorbed by the former University of New England to become UNE, Armidale. Secondly, the new institution which emerged as a result of the amalgamation of the member institutions retained the name of one of the former institutions: the University of New England. This implied an acquisition rather than a consolidation. This was also to cause problems within the network's interorganisational relationships which will be explored in chapter six.

Harman and Meek's next framework was to distinguish between amalgamations of institutions in one sector and cross-sectoral amalgamations. This becomes particularly important within the context of this research because the UNS replaced the binary system which had separated higher education into two tiers: universities and colleges of advanced education. The binary system divided Australian higher education into two sectors and each had different funding, organisational structures, and academic profiles. The merger of institutions from one sector was easier than merging institutions from both sectors because of the difference between the two sectors. Fundamental issues such as developing a relative funding model, course accreditation, and merging research interests were much easier if the amalgamating institutions came from the same sector because they would have similar approaches to funding, course accreditation and research. Cross-sectoral amalgamations were much more difficult because of the differences between the organisations in these fundamental areas. The resolution of these differences had the potential for interorganisational conflict between the amalgamating institutions because they may try to impose their interpretation of the issue on the other institutions.

The University of Western Sydney and Charles Sturt University were amalgamations in one sector of higher education consolidations in the sense that the member institutions were all former colleges of advanced education. This facilitated their amalgamation because the member institutions had a shared and common understanding of fundamental issues involving the management and developing of their new institution. The University of New England was a cross-sectoral amalgamation because it involved a former university and three former colleges of advanced education. This created problems and ultimately interorganisational conflict between the member institutions as they tried to resolve their different perceptions of key management issues such as funding, course accreditation, and research profile.

Harman and Meek's final framework was to distinguish between amalgamations of institutions covering similar academic fields and those of institutions covering similar academic interests. This distinction is similar to the economic terms: horizontal mergers and vertical mergers. While each of the network university member institutions had different academic profiles to some degree, the University of Western Sydney and Charles Sturt University members covered similar academic fields. The University of New England was also a horizontal merger but the difference between the academic profiles of
UNE, Armidale and UNE, Northern Rivers caused problems between the members and, in this sense, UNE involved aspects of a vertical integration.

5.5.4 The Political Economy

The political economy was different at each of the network universities. The network universities did not fully understand the importance of the political economy to the performance of a federated network structure. Charles Sturt was perhaps the only university to anticipate the potential for conflict and competition between the network members in a network structure. It aimed to resolve the problem by removing the political economy’s two key forces: network member autonomy and the role of the Chief Executive Officers in seeking funds and authority (autonomy) for their network members. At Charles Sturt, the network members became campuses of the university and were considered part of the University as a whole. At the University of Western Sydney and the University of New England, the political economy grew strongly from the start. Each network member pursued funds and authority within the network structure in order to gain the funds and other benefits they hoped to gain from joining their network university. The political economy eventually destroyed the University of New England’s network structure while the University of Western Sydney is held together by a sometimes tenuous balance of forces.

It is tempting to suggest that Charles Sturt anticipated the power of the political economy and resolved it by removing its key forces. However, there is no evidence to support this claim. This research suggests that none of the network universities understood the political economy or anticipated its influence on the network’s performance. The full importance of the political economy will be shown in chapter 6 as the dominating factor in the network’s operation. At this stage it is important to note that this research proposes that the different political economies at each network university developed as a result of their interpretation of the network structure.

5.5.5 The Network Configuration

The network universities began without a clear network configuration. This was due to their environmental uncertainty, the nature of the mandate, and different member interpretations of the network structure at each of the network universities. The network configuration explains the dynamics of the relationships between network members in network structures.
configuration refers to the governance structure and the other organisational processes which organise the members as one cohesive organisation. The invisible configuration refers to the underlying complexities of the network's interorganisational relationships.

The following analysis provides a brief overview of the confusion leading to the decision to adopt a federated network structure for the three new universities. It provides a background to the creation of the new universities and a further historical context to the formation of the interorganisational relationships within the federated network universities. The analysis is important because it:

a) illustrates the uncertainty and confusion surrounding the composition and structure of the new universities;

b) highlights some of the conceptions (and misconceptions) of the structure of the new universities which were to emerge as problems within the federated network structure.

In the late 1980s, it had become politically important to develop a university in Sydney's West. Prior to that point, higher education in the region had been provided by three colleges of advanced education: Hawkesbury Agricultural College, Macarthur Institute of Higher Education, and Nepean College of Advanced Education.

There had been rumours of a university being created for Sydney's West since the early 1980s. The Federal and State Governments wanted to increase higher education opportunities particularly for traditionally disadvantaged communities. Sydney's Western Suburbs had a population of more than a million people but its higher education participation rates were far less than that of Sydney's North, East and South. In 1986, there were 4.4 places available in higher education for every 1,000 people in the West, compared with 29.1 in the inner metropolitan area. In November 1986, after much community and political lobbying, the then Federal Minister for Education, Senator Susan Ryan, committed her government to a "completely new, free-standing autonomous university in the West".

In 1988, the rumours gathered momentum within the context of the Commonwealth Government's access and equity higher education policy. However, the initial plans were to build a new institution at Werrington called Chifley University. The region's CAEs would continue as colleges.

The political argument for a university in Sydney's West gained further momentum on 2 June 1988 when a Federal Parliamentary Report found thousands of school leavers in Sydney's Western suburbs were severely disadvantaged when competing for tertiary education places. The report found that for every child from Blacktown or Bankstown who attended university, there were eight from Woollahra or Lane Cove. It found that the Western Suburbs, which have the largest youth population in Sydney, were grossly under represented at universities. Dawkins indicated that the Federal Government would consider a major shake up of the university system to remove the inequities revealed by the report.

The first indications of a federated university in Sydney's West came on 15 June 1988 when Nepean's campaign questioning the efficacy of the Chifley proposal suggested that the Liberal State
Government should consider a multi-campus university that included the colleges at Nepean, Hawkesbury and Macarthur and perhaps Cumberland. Nepean forwarded a submission to Metherell which stated, "it is in the area of consolidating adjacent campuses that the greatest potential exists for savings in administrative costs. The full benefits of consolidating institutions will also require appropriate rationalisation of courses". The possibility of reducing costs was the main factor in the Government decision to abandon the Chifley proposal and consider a federated network university. It is important to note that Nepean, which was to become a network member of the University of Western Sydney, argued for the creation of UWS based upon notions of cost savings and administrative and course rationalisation.

The release of the Federal Government's White Paper effectively ended the Chifley proposal because it offered colleges university status. The White Paper meant there would no longer be any need for a new separate university at Werrington when there was a nearby college seeking university status (Nepean). In August 1988, in a major concession, Metherell said there was some logic in the argument that Nepean and Hawkesbury could be drawn into a joint planning exercise. Metherell also foresaw plans to have the University of Sydney support the fledgling university in its early stages. However, he shared Greiner's concern that Nepean should not be given university status on its own. He said Western Sydney's needs would not be met by a small university college operating as a satellite of the University of Sydney. At that stage, Nepean staff were becoming concerned about the University of Sydney's role in the new university and alleged that Sydney was about to launch an attempt to control higher education in the region. Staff feared Sydney wanted to takeover Nepean and make it a campus of the university.

The first official details of the possible structure and composition of the new university in Sydney's West were released on 3 September 1988 in a government report Higher Education in Western Sydney. The report was prepared by a joint Commonwealth-State Working Party and released by Metherell and Dawkins. It recommended that Hawkesbury and Nepean CAEs should be part of the new university to be established at Werrington. Further, that the multi-campus university in the West should have Sydney University as academic sponsor during its development phase, allowing Sydney University to exercise a definitive influence on academic standards.

On 5 September 1988 the plans for a multi-campus university in Sydney's West were rejected by the NSW State Government. The Government rejected the recommendation of the Working Party and instead urged the expansion of the University of Sydney. The new plan was considered by the University of Sydney's senate that evening. Under the plan, the University of Sydney would merge with higher education colleges, such as Hawkesbury CAE, to form an enlarged campus. Under the plan, the Western Sydney university would operate before its major building phase was completed at the 144 hectare Werrington site and Western Sydney graduates would leave with degrees from the University of Sydney. The proposal was considered as an option by the Working Party but rejected because of doubts that the radical change in attitude required to bring it into force could be achieved. The report recommended merging the existing institutions in Sydney's West and adding new facilities
at the Werrington site. The reason for the State Government's rejection of the Taskforce's recommendation was revealed by Metherell's comment that he was disappointed by the working party's report which he said placed economies of scale as its major priority: "I believe the basic defect of the report is its failure to consider the key question of quality". This reveals that he was concerned about the quality of education that would be provided by merging the existing Western Sydney CAEs as one university.

The political pressure on the State Government to change its views on the nature and structure of the Western Sydney university culminated on 8 October, 1988 when local government leaders in Sydney's West agreed to step up pressure on the State Government. Local government leaders wanted the university to be launched under the "guardianship" of Sydney university but to become autonomous after a few years. Members of all political parties in the west had agreed to unite to obtain a university that would eventually be autonomous. On 9 October, 1988 Metherell announced that "Mr Dawkins and I have given ourselves until the end of October to decide the structure of the University and what links it will have to other universities and colleges".

On 5 November 1988, a combination of Federal Government, Local Government, and community pressure led Metherell to back down from his position. Instead, Metherell announced that the West would get an independent university "in association" with the University of Sydney. Elements of Metherell's original plan, which had been endorsed by the NSW Cabinet, met with stiff opposition from local politicians, and were seen as problematic by University of Sydney academics. The new plan would result in the Government passing legislation before the end of the year to create a university incorporating Nepean and Hawkesbury. The proposal had been negotiated between the heads of the three institutions involved, and had met federal government criteria which would ensure the early release of promised federal funding for capital works.

The university became official on 17 May 1989 when the legislation creating the new network model of higher education institutions passed through both Houses of NSW Parliament without attracting any amendments. However, on 5 July 1989, after a spirited bid to maintain its independent college status, Macarthur decided it would like to become a network member of the University of Western Sydney.

The beginnings of Charles Sturt University were also surrounded by confusion concerning the composition and structure of the new university, although not to the same extent as for the University of Western Sydney. Early proposals for the new university in rural west and south western NSW were marred by rivalries between regions and cities. Prior to the Green Paper, there were plans for an independent Albury-Wodonga interstate college. These plans were thrown into doubt by the Green Paper and the strain began to show in the form of rivalry between cities in the region. A dispute developed between the planning body for the proposed college, Albury-Wodonga Board of Management, and the Riverina-Murray Institute of Higher Education based in Wagga Wagga. The Albury-Wodonga Board signalled that it intended to go ahead with plans to create the new college by merging the Wodonga Institute of Tertiary Education with the Wagga institute's Murray Campus (based
The creation of Charles Sturt was formally announced on 5 April, 1989 when the State Government stated it was to establish a rural-based university to cater for more than 9,000 students in the Bathurst-Orange and Riverina areas. The rural university would incorporate the Riverina-Murray Institute of Higher Education (campuses at Albury and Wagga), the Mitchell College of Advanced Education (at Bathurst) and the Orange Agricultural College. Each campus would have its own Deputy Vice Chancellor and the UNSW would sponsor the new university. Metherell announced on 19 April, 1989 that the proposed new multi-campus university for rural NSW would be named Charles Sturt University.

However, the new university did not begin without its problems. The institution found itself in a battle for control with its "parent" institution the University of New South Wales. The problems seemed to focus on the UNSW Vice-Chancellor Professor Michael Birt. Birt was also the acting Vice-Chancellor. He was supported by an advisory committee comprised of mostly his own senior administrators which was resented by some at Charles Sturt.

Charles Sturt's senior management was to become a source of conflict within the university. On 4 April 1990, Charles Sturt decided not to proceed with a series of controversial senior appointments at its Mitchell campus following a strike by academics and pressure from the Federal Industrial Commission. Professor Blake's appointment as Vice-Chancellor was to play a critical role in the University's interpretation of the federated network structure and its early development. Professor Blake adopted a centralised network model which provided him with substantially more power within the network structure than the Vice-Chancellors at the University of Western Sydney and the University of New England.

The new University of New England also had problems over its composition and structure. Two of the issues which were fundamental to the problems which were to emerge between the University's network members began as early as 24 August, 1988. The selection of a name for the new university and its funding arrangements created conflict between network members. Then Vice-Chancellor Professor Don McNicol foresaw a promising future for the institution but conceded that it would not be without its problems. He felt that two issues clouded an otherwise clear horizon: the name of the institution and the Federal Government's plans to reduce the cost of external education. External education was a major component of the University's academic profile. McNicol wanted New England to be retained as the new university's name but acknowledged there was a strong body of opinion at the two colleges initially involved in the amalgamation - the Armidale CAE and Northern Rivers CAE - that a new name needed to be found. The colleges argued that retaining the present name would promote the perception that the colleges had been taken over by the university. McNicol also acknowledged the geographical and cultural differences of the university's two major members when said he understood that people on the coast (Lismore) "do not identify strongly with the New England area". These issues later emerged as contributing factors to the deteriorating relationships between UNE, Armidale and UNE, Northern Rivers.
On 10 May 1989, the University of New England and Armidale and Northern Rivers Colleges of Advanced Education agreed to negotiate an amalgamation with Orange Agricultural College. The merger, an attempt by Orange to avoid merger with Charles Sturt University, would allow Orange to become a university college of the proposed university in Northern NSW. This followed a concession by the NSW government to allow Orange to seek a more suitable partner before the next sitting of Parliament. Staff at Orange said the link with New England would protect the College's traditional role of tailoring its courses to the requirements of rural communities around the country. The use of the word protect reveals the anxiety all colleges had at that time with the threat of being taken over by a larger institution. Some staff felt that the matter was still sensitive: "Our problem is that if we are forced into a full amalgamation with Charles Sturt, we will be a very junior partner and will not necessarily receive recognition of our specialist rural management role. If we merge with New England, we will still be a junior partner, but they will recognise as a university college, with a specific role, not as a full amalgamated member". The focus on recognition, status, role and autonomy illustrate that Orange viewed the University of New England as a network structure which would provide a degree of member autonomy while Charles Sturt University's, whose Bathurst campus is only a relatively short distance from Orange, centralised network model would have threatened its autonomy. On 23 August 1989 it was announced the Orange Agricultural College would become a "college member" of the network University of New England (UNE) on 1 January 1990.

After the Government and the institutions themselves had considered various ways to organise the network university institutions, it was decided that the three new network universities would have the same organisational structure: a federated network structure.

The problem of how to organise the member institutions into a coherent organisational structure was largely resolved at UWS by the institutions themselves. The members wanted to retain as much autonomy over their day to day operations as possible while still forming a single organisational entity. This was achieved by adopting the network member autonomy model of the federated network structure. However, the members did not yet fully understand the implications of the network member autonomy model nor how the federated network structure works. The University's biggest challenge was to resolve the difficulty of balancing the members' desire to act autonomously but need to act interdependently to achieve the objectives of the network as a whole. The University also did not grasp the potential caused by the network member autonomy model for problems within the network's political economy as the members pursued funds and authority. The network member autonomy model has the potential to create the strongest of the network structure's political economies because the members begin with equal status and power, strive to maintain their autonomy, and pursue funds and other benefits in direct competition with the other members. The result is a very political environment and interorganisational conflict between the members which is largely explained by the network's invisible network configuration.
largely resolved at Charles Sturt by the University's senior management; more specifically, the Vice-Chancellor Professor Blake. Professor Blake interpreted the legislation as providing for a centralised model of the federated network structure. He moved quickly to integrate the network members and introduce central University-wide academic and administrative governance structures. Of the three network universities, Charles Sturt had the least problems with its network configuration. This was largely because its adoption of the centralised model closely resembled the traditional multi-campus university structure. University staff understood the multi-campus operation of a centralised traditional university structure and there was, therefore, visible and invisible network configuration did not cause the same confusion and uncertainty as at the other two network universities. However, Charles Sturt did not yet fully understand the implications of the centralised model within a federated network structure nor how the federated network structure works. The University's biggest challenge was to resolve the difficulty of applying a centralised model, typically used for two or three campuses less than fifty kilometres apart, to campuses hundreds of kilometres apart. The federated network structure was chosen for Charles Sturt because it was felt that strong central control would not work in a university structure comprising geographically remote campuses. However, the centralised network model largely removed problems within the network's political economy as the members did not play a role within the political economy. The centralised model creates the weakest of the network structure's political economies because the members are integrated and funds and power are determined centrally. The result is a political environment controlled by the network's centre and relatively low interorganisational conflict between the members which is largely explained by the network's invisible network configuration.

At the University of New England, the problem was how to merge a university with three colleges. The former University of New England was New South Wales' second oldest university. It had a proud and long tradition and had a well established reputation as a fully fledged university in its own right. The Armidale CAE and the Northern Rivers CAE, while being excellent institutions, certainly did not enjoy the same status or reputation. Within the binary system, they were seen as being on the second tier of Australian higher education institutions along with other colleges. The merging of one or more colleges with a university was the most common amalgamation which occurred following the White Paper. However, the result in most cases was that the identity of the former college was lost in the new structure which arose out of the amalgamation and the new institution simply became a larger version of the former university. The University of New England was unique because, with the exception of the Armidale CAE which merged completely with the former University of New England, the colleges were not to be simply absorbed by the university, they were to retain their autonomy. This created serious problems of perception and status. Whereas the University of Western Sydney and Charles Sturt University institutions entered their networks with a rough parity in status due to them being former colleges, the University of New England institutions had very different perceptions about their status within the network structure. The former University of New England felt that, as a former university, it was the senior partner within the network structure and would play a supervisory role in guiding the former CAEs towards full university status. The former Northern Rivers CAE felt that it would be an equal partner within the network structure and have the same status as the former UNE.
This raises questions about whether a federated network structure is appropriate for the merger of institutions with significant differences in size and status prior to amalgamation. These questions will be examined in chapter 6.

5.5.6 The Advantages and Disadvantages of the Federated Network Structure

In answering the questions of why the federated network structure was chosen for the network universities and whether it is the most appropriate structure from which to achieve the universities' purposes, it is important to determine what are the advantages and disadvantages of the federated network structure and, if so, whether the advantages outweigh the disadvantages. Both Government and the institutions hoped that the federated network structure would allow the member institutions to achieve objectives together which they could not have achieved as separate institutions. However, the advantages and disadvantages of the federated network structure, and ultimately the performance of the network, has more to do with the interorganisational relationships between the network members than with performance targets, goals, or objectives. Effective interorganisational relationships will better allow the network members to achieve their individual and collective goals.

Provan (1983) was one of the few theorists to analyse the advantages and disadvantages of the federated network structure. He focussed upon the central coordinating agency as being the main source of advantages for the network. The central coordinating agency was the one structural component that distinguished the sum of the network from the individual components. It is reasonable to assume that the network structure's additional organisational component should provide benefits or otherwise the central coordinating agency, and perhaps the network itself, would not be necessary. Provan suggests that because organisations in a federation are able to interact with one another indirectly through the federation's management instead of through direct linkages, involvement in a federation can reduce substantially the number of such linkages while still maintaining the integrity of the network. In addition, organisations in a federation are able to reduce the number of linkages with elements external to the network (such as resource suppliers) by having the federation's management unit mediate the flow of resources to and from the environment. Thus membership of a federated network allows members to reduce both the uncertainty and the complexity of their external environments. The assumption of the members is that the central coordinating agency will take control of these activities, thereby freeing members to focus on their primary areas of expertise.

This suggests that the central coordinating agency (the Office of the Vice-Chancellor) can reduce the environment's affect on the network member organisation's by being the network's main link to external environments. In the case of the network universities, the Office of the Vice-Chancellor was to
be the network's sole link to Government and was therefore expected to play a key role in negotiating for resources. It is reasonable to conclude that the resources gained by the Office for the network are a key measure of its performance.

Provan suggests that "federations tend to form when a relatively large number of interdependent organisations exist, when there is a relatively large discrepancy between the prime expertise and goal orientation of the interdependent organisations and the anticipated role of the federation's management, and when there are substantial external pressures to form a federation." This suggests that the central coordinating agency (the Office of the Vice-Chancellor) should provide services and expertise that the network members could not provide on their own. In other words, the Office of the Vice-Chancellor should be capable of doing things on behalf of the network members that they could not perform as independent organisations. It is reasonable to conclude that the range of services and expertise provided by the Office for the network were also a key measure of its performance.

In simple terms, both the institutions and government expected the network structure would organise a few small colleges into a size appropriate for a university. The Government wanted to abolish the college sector and its colleges. The Government had three options with the former CAEs:

a) merge them with an established university,
b) merge them together to form a university, or
c) grant them independent university status.

The Government did not want to grant independent university status to small CAEs because it felt they were too small. The network university CAEs did not want to join with an established university because they felt they would lose their autonomy and perhaps their organisational identity. The compromise for both the Government and the institutions was to merge the colleges together to form a university in their own right.

The Government hoped that the new universities would organise themselves into an effective and efficient institution. The history of Australian higher education meant that Government seldom became involved in the day to day management of an institution and therefore it had little influence over the organisational design of its institutions other than through the legislation which created them. While Government expected each university to manage its affairs effectively and efficiently, the actual organisation of the institutions was left to each individual university.

The literature's discussion of the advantages of the federated network structure focus on the benefits to be provided by the coordinating agency (the Office of the Vice-Chancellor). The coordinating agency's role as network coordinator means that it:

a) coordinates the combined efforts of the network members and their relationships, and
b) reduces the need for network members to have relationships with external bodies, particularly
Therefore, much of the evaluation of the advantages of the network should focus on the role of the coordinating agency. Much of the disadvantages refer to organisational resource wastage such as duplication, time spent in meetings and so on. The network is clearly not the most efficient structure for the organisation of universities because it creates duplicated and other resource inefficiency. However, the question remains whether the federated network structure was the most effective structure for the organisation of the three network universities.

The basis of the exchange perspective of interorganisational relations lies in the suggestion that the benefits of an interorganisational relationship should outweigh the costs or the organisations involved will wish to withdraw from the relationship. It follows that any analysis of the advantages and disadvantages of federated network structures should consider the benefits and costs of the network's interorganisational relationships from the network members' perspective.

This research will later explore the performance of the Office of the Vice-Chancellor and the three federated network structures in order to determine whether the network was the most effective and appropriate structure for these three universities.

5.5.7 Synergy

Synergy is an important component of federated network structure analysis, particularly their performance, because the principle advantage of the network is that the interorganisational relations between the members will create synergy allowing them to achieve more than would have been possible as separate institutions. Synergy implies that organisations can be more effective working together than apart and both Government and the institutions hoped that the federated network structure would create synergy.

The concept of synergy is derived from the field of corporate finance. It is most commonly used when discussing the financial feasibility of mergers and takeovers. The more detailed financial aspects of corporate finance, mergers and takeovers are beyond the scope of this research, however, there are two aspects which are very relevant: synergy and the broad theory of mergers. The study of mergers and synergy is relevant because the research's subject organisations were formed through mergers (although not in the strictly corporate finance sense of leveraged buy outs and so on) and synergy is suggested as a potentially fundamental advantage of the federated network structure.

In the field of corporate finance, the financial manager of firm A considering the possible purchase of firm B will be primarily interested in whether there is an economic gain from the merger. There is an
economic gain only if the two firms are worth more together than apart. For example, if we consider the combined firm would be worth $PV_{ab}$ and that the separate firms are worth $PV_a$ and $PV_b$, then:

$$\text{Gain} = PV_{ab} - (PV_a + PV_b)$$

If this gain is positive there is economic justification for merger. However, we must also consider the cost of acquiring firm B. If the acquisition was made through a cash payment, then the cost of acquiring firm B is equal to the cash payment minus firm B's value as a separate entity. Thus:

$$\text{Cost} = \text{cash} - PV_b$$

The net present value to firm A of a merger with firm B is measured by the difference between the gain and the cost. Therefore, the decision should be to proceed with the merger if its net present value, defined as:

$$\text{NPV} = \text{gain} - \text{cost} = PV_{ab} - (PV_a + PV_b) - (\text{cash} - PV_b)$$

Obviously, the difficulty in applying this concept to the amalgamation of higher education institutions to form federated network universities is that it is difficult, if not impossible, to determine the value of higher education institutions in dollar terms. In addition, the amalgamations did not involve the purchase of an institution in dollar terms. Therefore, from the perspective of corporate finance, it is not possible to determine the financial value of the network university amalgamations.

However, there are several important principles which can be used in assessing the worth of the amalgamations. It is clear that the combined value of the organisations involved in the merger should exceed the sum of their individual value. For those organisations which cannot be assessed in monetary value terms, value can be seen in terms of output or achieving its objectives. In the case of the network universities, the combined output of the member institutions should exceed the sum of their individual output. The concept of synergy suggests that $1 + 1 + 1$ should be greater than 3. Therefore, if the institutions cannot achieve more together than they could separately, the merger is not sensible and in corporate finance terms, there is a loss. The other important principle is the cost in acquiring the member institutions. The calculation of the net benefit of the network university amalgamations must also include the costs involved in the amalgamation. Therefore, the decision should be to continue with the amalgamated network universities if its output, defined as:

$$\text{Output} = \text{gain} - \text{cost} = \text{Output}_{member 1, 2 \& 3} - (\text{Output}_{member 1} + \text{Output}_{member 2} + \text{Output}_{member 3}) - (\text{costs})$$

is positive.

Brealey and Myers considered some of the reasons mergers fail and found that one reason is because...
managers cannot cope with the complex task of integrating two firms with different processes, accounting methods, and corporate cultures. Moreover, the value of most businesses depends upon human assets, managers, skilled workers, engineers and so on. The authors suggest if these people are not happy in their new roles, the best of them will leave. This suggests that successful amalgamations rely upon the capability to integrate the organisations involved and, in doing so, maintain staff morale and keep key senior staff happy and secure.

Both the Federal Government and the network universities hoped that economies of scale would result from merging the network member institutions. However, Charles Sturt was the only network university which has achieved economies of scale because it centralised its academic and administrative functions and largely removed duplicated resources. Both the University of Western Sydney and the University of New England sought economies but failed because the political economy would not allow it. The network members resisted attempts to integrate some common functions across the University as a whole. Economies of scale requires some centralised functions which the members were not willing to support because it would reduce their autonomy. The full implications of these issues and the question of synergy will be examined in chapter seven.

5.5.8 Conclusions

The analysis supports proposition 5. The uncertainty and confusion surrounding the creation of the three network universities combined with the different interpretations of the network structure by members at each of the network universities suggests that they did not begin with a clear network configuration. The various papers produced by the network universities to explain the network structure suggests that they felt the need to develop their own network configuration. The proposition is further supported by each network university's different interpretations of essentially the same mandate. This suggests that if a federated network structure begins without a formally agreed upon network configuration, network members will be forced to construct their own configuration.

In terms of the weakness identified within the literature, there is support for the proposition that there needs to be further empirical research into interorganisational relationships within federated network structures. The analysis showed the need to explore the dynamics of the political economy within federated network structures and its implications for the network's interorganisational relationships.
CHAPTER SIX: THE NETWORK IN OPERATION

6.1 Introduction

This chapter examines the operation of the federated network structure at the three network universities: the University of Western Sydney, the University of New England, and Charles Sturt University.

This research adopts Benson's (1975) framework for network analysis which suggests that network activity is a function of its political economy and, more specifically, the network members' pursuit of funds and authority. This research proposes that the operation of the federated network structure is largely explained by its political economy. This chapter focuses on the use of power, force, conflict, coercion, and other political processes in the pursuit of funds and authority within each of the network universities.

This chapter continues with Stern's (1981) framework for network analysis. It builds on the historical context provided in chapter five by examining each network university's current structural characteristics and the processes that link network structure to the interests of the network members. This research proposes that the operation of the federated network structure and, in particular, its interorganisational relationships are also explained by the structural processes which allow the members to pursue benefits from the network structure. Therefore, this chapter concludes with an examination of the specific structural aspects of the network structure at each of the network universities.

This chapter also builds on the issues highlighted in chapter five. It shows that many of the issues which were important to the historical development of the interorganisational relationships within the network universities were fundamental to the operation of the federated network structure. These include the members' motivations for forming interorganisational relations with other members, their interpretation of the federated network structure and the mandate, their perception of the permanency of the relationship, and their perception of the benefits and costs which would result from the relationship.

The theoretical frameworks used for this chapter's analysis are derived from the resource-dependency perspective of Interorganisational Relations, the study of networks within the operational definitions of interorganisational relations, and interorganisational conflict drawn from the other dimensions section of the literature review.
The frameworks derived from the resource-dependency perspective are pure resource-dependency and the power or political theories. The pure resource-dependency framework is an extension of organisational exchange. It is used to explore how the network members sought to reduce their dependence on others for resources and, in turn, to increase others' dependence on them within the political processes of the network structure. The power or political theories are used to explore the pursuit of funds and authority within the network structure. This research uses both frameworks to examine the network universities' governance structures. It proposes that a federated network's governance structure provides the processes which explain the network's political economy and link the network structure to the interests of the network members. Governance structures determine the level of control within a federated network structure and control is the defining principle within any network.

The frameworks derived from the study of networks are used to analyse the interorganisational relationships within the network universities. These include the political economy and the use of political processes within the network's interorganisational relationships. The frameworks derived from the study of interorganisational conflict are used to explore the nature of the interorganisational relationships resulting from the network's political economy.

The chapter concludes by analysing the specific structural aspects of the network structure using theoretical frameworks provided by Benson (1975), Aldrich (1977), and Stern (1981).

The chapter follows the following format: each section is introduced with an overview of the relevant theoretical frameworks drawn from the literature; the three network universities are then compared and contrasted using the literature's frameworks in order to evaluate the network universities from an interorganisational relations perspective and to test theoretical constructs within the literature.

6.2 Governance Structures Within Federated Networks

6.2.1 Theoretical Overview

Theoretical frameworks for studying governance structures within federated networks are drawn from the operational definitions of Interorganisational Relations and the study of federated network structures. These theoretical frameworks consider interorganisational relationships within federated network structures as being determined by the nature of the network's governance structure. A network's governance structure defines who has control and what degree of control. The governance structure also defines the network's political economy by determining the balance of control between
the network members and the central coordinating agency. Those with control within the network's governance structure can control the network's political economy and be in a stronger position to pursue funds and authority within the network.

Provan (1983) was one of the few theorists to consider how federated network structures are governed. He suggests that control is the principal way of distinguishing between a federation and other types of linkage arrangements. Non-federated linkages such as joint ventures are controlled and managed by the organisation involved in the linkage. When an organisation becomes affiliated with a federation, it relinquishes at least partial control over decisions regarding those of its activities that are managed by the federation administration, or what Provan refers to as federation management organisation (FMO). This research will refer to FMOs as central coordinating agencies. The central coordinating agency generally allows considerable day to day operating autonomy for affiliated organisations or members, but all members must act on behalf of the interests of the federation as a whole, at least regarding those issues managed by the central coordinating agency. In return for general federation support, the central coordinating agency acts on behalf of the interests of all members. In addition, in most cases, the central coordinating agency owes even its existence to the support of its members.

The examination of each network university's governance structure is crucial to gaining an understanding of the operation of their federated network structures. The degree of control of the central coordinating agency and the network members helps to define each network's interpretation of the federated network structure from the strong network member autonomy model, with low central coordinating agency control and high network member control, to the strong centralised model, with high central coordinating agency control and low network member control. The governance structures help to define these levels of control. It also explains the operation of each network's political economy.

In exploring the operation of the network structure at each of the network universities using the governance structure theoretical frameworks, the research also aims to test a theoretical proposition within the literature and to examine some weaknesses of the literature.

The proposition is:

Proposition 6: The ability to make and administer rules regarding possession, allocation, or use of resources will be a critical source of control within a federated network.

The weakness identified within the literature is the need to resolve the tension between coordination and autonomy within federated network structures. The network structure promotes network member autonomy but requires members to collaborate in order to meet the network's objectives. It is only through member interaction that the network can achieve synergy and become more than simply the sum of its parts. Network members want autonomy and the funds and authority to achieve their
objectives. However, they recognise that they need to interact with other members in order to achieve the objectives of the network as a whole. The literature has not examined an appropriate balance between member autonomy and network coordination so that members' individual objectives can be met and the network's objectives can also be met. This research aims to explore the tension between member autonomy and collaboration within the context of examining the roles of the central coordinating agency and the network members within network structures.

The literature also lacks adequate empirical investigation of the distinction between federated network structures and other types of interorganisational relations. It requires further examination of how networks operate. Provan provided the telling insight into the importance of control as the principal way of distinguishing between a federated network and other types of linkage arrangements. Benson and other power/political theorists have shown how the use of power, force and coercion can influence the operation of network structures. However, the literature has failed to explore how governance structures contribute to the distribution of control and the use of political processes within network structures. This research aims to explore these issues within the network universities' governance structures, particularly their academic and administrative governance.

6.2.2 The Role of the Central Coordinating Agency (Office of the Vice-Chancellor)

6.2.2.1 Introduction

The role of the Office of the Vice-Chancellor within the federated network universities is part of the literature's studies on network structures. Several theorists have found that networks often involve some form of controlling or coordinating body. Stern (1981) calls this body a coordinating agency, Aldrich and Whetten (1981) call it a linking-pin organisation, while Provan (1983) calls it a federated management organisation (FMO). This research will call it a central coordinating agency; central because it is central to the operations of the network and is the focal point of the centralised structure of the organisation, and coordinating because its functions are primarily to coordinate the activities of the network.

Each of the network universities wrote papers on the role of the central coordinating agency (the Office of the Vice-Chancellor). The analysis which follows will draw upon these papers in analysing the role of the Office of the Vice-Chancellor at each of the network universities.

The University of Western Sydney identified three key organisational constructs within its federated network structure, each representing a different locus of operation. These are:
6.2.2.2 University-wide Construct

The University wide construct refers to those decisions and functions which affect the network as a whole. At the University of Western Sydney and the University of New England, the University-wide construct involved those issues where the members acted interdependently to achieve objectives for the network as a whole. At Charles Sturt University, the University-wide construct represented the integration of the University as a whole and its operation as a single, integrated organisational entity.

At each of the network universities, University-wide decisions play a key part in determining the framework in which other decision making units function within the University. Decisions at the University-wide level concentrate on providing a planning and policy framework for network member operations, the maintenance of high academic standards, the provision of efficient and effective operations and the fulfilling of responsibilities as the legal entity. Either the Chancellor or the Vice-Chancellor are usually the spokesperson for University-wide decisions or negotiations with Government.

Each of the network universities consider themselves to be single legal entities with the Vice-Chancellor as its Chief Executive Officer. Within the University-wide construct, the Board of Governors is considered the ultimate and principal policy making body. It is assisted by its own committees; and the Academic Board and its Committees. The Academic Board is the principal advisory body to the Board on academic matters.

While this outline presents the visible configuration of the network universities' University-wide governance structure, the real control within each network is explained by the invisible network configuration.

At the University of Western Sydney, the real responsibility for making key University-wide decisions was held by the Corporate Management Team (CMT). The CMT comprised the Vice-Chancellor and the three Chief Executive Officers. The CMT is the forum for the network’s political economy. At the CMT meetings, the CEOs pursued funds and authority within the network structure. It is important to
note the University considered the role of the CMT to be both deliberative and advisory to the Vice-Chancellor. While the CMT was intended to be an advisory committee to the Vice-Chancellor on key University-wide issues, the University's network member autonomy model ensured that the CEOs had input into decision making at the University-wide level. This fuelled the network's political economy and ensured that the CMT was a forum for interorganisational conflict between the network members within the network's political economy.

Charles Sturt University's centralised network model meant that the distinction between the University-wide construct and the Office of the Vice-Chancellor construct was blurred. The integration of the University and the strong role of the Office of the Vice-Chancellor, particularly the Vice-Chancellor, in the implementation of the centralised network model meant that the University-wide construct and the Office of the Vice-Chancellor construct were almost identical. However, the real responsibility for making key University-wide decisions was held by the Vice-Chancellor.

The University of New England's interpretation of the University-wide construct was similar to the University of Western Sydney's. The University began with hope that there would be a balance of University-wide objectives and member specific objectives. However, as the interorganisational relationships within the network deteriorated, the University-wide construct grew weaker as member commitment to the network decreased. Under these conditions, the University-wide construct became dominated by the member construct.

6.2.2.3 Office of the Vice-Chancellor Construct

The role of the Office of the Vice-Chancellor caused problems at each of the network universities. The issue proved so divisive that each of the network universities tried to clarify the Office's role in a succession of papers. Each of the papers defined the role of the Office of Vice-Chancellor in terms of its functions and responsibilities. This provided the visible configuration but ignored the more important invisible configuration which includes the advantages and benefits the central coordinating agency should provide. Each of the network universities failed to grasp that the real role of a network's central coordinating agency is to facilitate the advantages of the network structure and provide benefits for the network members.

The University of Western Sydney considered the Office of the Vice-Chancellor construct to involve decisions related to the roles and locus of operations defined by its staff which includes the Vice-Chancellor and the Deputy Vice-Chancellors/Chief Executive Officers. It is not clear whether the Deputy Vice-Chancellors/Chief Executive Officers should be considered part of the Office of the Vice-Chancellor. Most network member staff perceive their CEO as the Chief Executive Officer of their network member and, in this sense, clearly separate from the Office of the Vice-Chancellor. However,
others see them in their role within the Corporate Management Team which is technically part of the
Office of the Vice-Chancellor. This confusion reflects the dual role of the Chief Executive Officers
which involves University-wide activities network member specific activities as member CEOs.
However, the University of Western Sydney CEOs focussed their energies far more on their role as
member CEOs than as University-wide Deputy Vice-Chancellors.

For most of the University of Western Sydney's staff, the Office of the Vice-Chancellor refers to the
Vice-Chancellor and his staff. The Office of the Vice-Chancellor includes a University Secretary,
Planner, Public Affairs Manager, Information Systems Manager, Employee Relations Manager, and an
Executive Officer responsible for Secretariat operations. The role of these staff is also subject of some
debate. The functions and authority of the Office of the Vice-Chancellor staff (excluding the Vice-
Chancellor) is an issue of concern within the network. Under the network member autonomy model,
the Office of the Vice-Chancellor should play a coordinating, facilitating, and service provision role on
behalf of the network as a whole. The Office's staff, with the exception of the Vice-Chancellor, had no
line authority over member staff.

Essentially, the Office of the Vice-Chancellor has two major roles at the University of Western Sydney.
In the first place it manages and supports the University-wide sphere of operation within the University
as, for example, when it acts on industrial relations issues which must apply to all staff across the
University or when it implements a University-wide decision made by the Board of Governors.
Secondly, it has the task of doing things on behalf of the University as a whole, and these, in a
federated network structure, should often be those things which the network members have agreed
are to be done for all of them.

All recommendations to the Board of Governors for policy, planning and resource allocations except
those originating from the Academic Board come through the Vice-Chancellor. The Vice-Chancellor is
responsible for carrying out the decisions of the Board of Governors. In his Follow-Up Paper, the Vice-
Chancellor outlined the key matters which are his responsibility:

* Strategic planning and monitoring
* Corporate policy making
* Resource acquisition and allocation to Members
* Monitoring of Member performance against agreed plans
* Representation of the University to Governments and Government Departments
* Representation of the University to external communities and bodies
* Corporate employee relations
* The provision of University-wide systems, procedures and services.

This is a reasonable outline of the functions and responsibilities of the Office of the Vice-Chancellor.
The University of Western Sydney's network member autonomy model meant that the Office had little
control or power within the network, with the exception of the Vice-Chancellor. The University may
have enhanced the role of the Office by including the Corporate Management Team in its role definition. However, the member CEOs saw their most important function as representing their members' interests within the network's political economy. The CMT was seen as the forum for member specific issues to be resolved or for University-wide issues to be resolved within the context of the outcomes for individual members. Therefore, the CMT could not be legitimately included in the Office of the Vice-Chancellor's role definition.

Charles Sturt University's interpretation of the role of the Office of the Vice-Chancellor reflected its interpretation of the federated network structure. Its centralised network model placed responsibility for management of the University with the Office of the Vice-Chancellor, and more specifically, the Vice-Chancellor. Professor Blake had far greater power and control within the network structure than either Vice-Chancellor at the two other network universities. His focus was to integrate the University as a single organisational entity and to dispense with network members as separate organisational entities within Charles Sturt's network structure.

It may be argued that Charles Sturt's centralised structure did not place full management responsibility with the Office of the Vice-Chancellor. Academic management was the responsibility of Deans located across the network who were not, strictly speaking, staff of the Office of the Vice-Chancellor. However, the Deans and the various administrative heads, reported to the Vice-Chancellor or staff within the Office of the Vice-Chancellor. This was the fundamental difference between Charles Sturt's interpretation of the federated network structure and that of the two other network universities. Charles Sturt's Office of the Vice-Chancellor had a far greater role in University-wide and member specific issues. However, its role was not so much to facilitate the advantages of the network structure as suggested in the literature but to manage the University's activities by providing central control.

In his October 1990 paper to the Board of Governors, Professor Blake outlined his plans for Charles Sturt's senior management structure and the role of the Office of the Vice-Chancellor. Professor Blake indicated that his objectives in recommending a management structure for CSU were:

a) That there be an unimpeded flow of authority and accountability from the Board of Governors through the Vice-Chancellor to officers who are responsible for the coordination and implementation of designated functions;

b) That activities and individuals, regardless of their location, be administered by a common set of conditions and be subjected to similar evaluation and opportunities for advancement;

c) That the services provided by management be accessible to other staff, students and the communities served by the University. Conversely, staff, students, and communities should be able to influence the services being provided as well as the decisions and priorities of management through their access to senior officials;
d) That the decision making processes of the University accord with the principles of equal employment opportunity and that senior officers be responsible for ensuring that these principles are respected; and

e) That because CSU is a federated network University, there is opportunity as well as the urgent need, for the Vice-Chancellor to share his responsibilities for leadership as well as the load, with two Deputy Vice-Chancellors, a Pro-Vice-Chancellor and other senior administrative officers. To achieve this sharing, Deputy Vice-Chancellors and a Pro Vice-Chancellor shall have university-wide responsibilities concurrently with those as Principal of a member. Each Principal shall be responsible for overseeing, though not necessarily for performing, the day to day management of a Member and representing the interests of that Member in the local community.

Professor Blake argued that the assumption of university-wide responsibilities by many senior officers of the University was an important strategy for building a cohesive and stable institution, the members of which are more likely to enjoy mutual confidence and trust. It was also an effective way to decentralise the administration of the University without loss of efficiency.

It is important to note that Professor Blake considered his senior management structure would decentralise the administration of the University. Professor Blake did not consider his interpretation of the federated network structure was a centralised model. He rejected suggestions that he had centralised the University's management structure and believed it was a true federated network structure in terms of his understanding of the legislation. However, it should be clear from the analysis presented by this research, particularly in terms of the comparison between the three network universities, that Charles Sturt had a centralised management structure. This is clearly demonstrated by its interpretation of the role of the Office of the Vice-Chancellor.

There are several apparent and some not so apparent differences in Charles Sturt University's senior management structure compared with the University of Western Sydney and the University of New England's senior management structure. The differences involve the visible (apparent) and the invisible (not so apparent) network configuration. The most important difference is the strong focus on the University-wide role of the Deputy Vice-Chancellors. Charles Sturt almost always referred to its member Chief Executive Officers as Deputy Vice-Chancellors, and while the title implies a powerful position, they had less power within the network's political economy than the CEOs at the other two network universities. Professor Blake gave the member CEOs key University-wide responsibilities so that they would focus on the University's objectives and not their member's objectives. Their functions and responsibilities reflect the centralised and integrated management of the University's activities. Student Services, for example, was managed separately at each member at the University of Western Sydney but was managed centrally by the Pro-Vice-Chancellor at Charles Sturt. The other key difference was the inclusion of Deans and senior administrative staff (including Office of the Vice-Chancellor staff) on the Vice-Chancellor's Advisory Committee (VCAC). It may seem that the size of the
committee and the range of positions on the committee reflect a decentralised or even democratic leadership approach: the VCAC had eighteen members while the University of Western Sydney's equivalent committee - the CMT - had four. However, the University of Western Sydney's CMT decentralised power within the network's political economy by providing a forum for the network members to funds and authority. The VCAC maintained the centralised power of the Vice-Chancellor by ensuring the Vice-Chancellor had control over the integrated academic and administrative functions of the University.

The University of New England had difficulty in clarifying the role of its Office of the Vice-Chancellor. The Amalgamation Committee report envisaged a far stronger role for the Office of the Vice-Chancellor than that which eventuated. It suggested the Vice-Chancellor's role should be:

"The Vice-Chancellor is the Chief Executive Officer of the University, responsible to the Board of Governors for the leadership, management and development of the University, and the realisation of its stated mission.

UNE had hoped the Office of the Vice-Chancellor would assume a strong central role than the member autonomy model adopted at UWS. However, the University was never really successful in developing its University-wide construct. The network members' individual objectives always outweighed their interest in University-wide objectives. As the interorganisational relationships between UNE's network members deteriorated, the focus on the University-wide construct continued to diminish as the members' commitment to the network structure dwindled.

The proposed structure of the Office of the Vice-Chancellor at UNE comprised a Vice-Chancellor, a Deputy Vice-Chancellor to head each network member and a third Deputy Vice-Chancellor who would take over portfolio responsibilities for certain institutional and trans-campus matters as determined by the Vice-Chancellor.

The University of New England had elements of both the University of Western Sydney's network member autonomy model and Charles Sturt University's centralised model in its role for the Office of the Vice-Chancellor. It included the member Chief Executive Officers as part of the central management structure, similar to Charles Sturt, but hesitated at focussing their role on key University-wide activities. It tried to coordinate key functions and responsibilities for the University as a whole in a Secretariat, similar to Western Sydney, but hesitated at including Deans and administrative heads in the Office of the Vice-Chancellor. Thus, the University's envisaged role was a peculiar mixture of the centralised model of Charles Sturt and the decentralised UWS model. It wanted to provide the Office of the Vice-Chancellor with a strong role but could not do so because it adopted a version of UWS's member autonomy model which prevented a centralised management structure. The strength of the members within UNE's federated network structure's political economy meant that the Office of the Vice-Chancellor's role was to facilitate the advantages of the network structure for the benefit of the members in the same role as the University of Western Sydney's Office of the Vice-Chancellor. UNE's
problem was that it wanted the Office to play a stronger leadership rather than facilitator role. The federative nature of the University's interpretation of the network structure is illustrated by its interpretation of the role of the Office of the Vice-Chancellor. Its desire for central leadership but respect for member autonomy is demonstrated by the appointment of a Deputy Vice-Chancellor with specific responsibilities on "trans campus matters". Professor Terry Field's role as Deputy Vice-Chancellor (Network) was a unique position amongst the network universities. It also demonstrates UNE's commitment to the role of the Office of the Vice-Chancellor in making the federated network structure work. However, UNE's federative role for its Office of the Vice-Chancellor did not succeed. It was constrained by the battle between the network members within the network's political economy and its efforts to promote the network concept and facilitate relations between the members became frustrated.

The differences in the role of the Office of the Vice-Chancellor at each of the network universities illustrates differences in their interpretation of the network structure. This research has shown how the Office of the Vice-Chancellor was one of two crucial differences between the network structure and the traditional university structure; the other being the role of member Chief Executive Officers. The literature has also indicated that the central coordinating agency's role will help define the interpretation and operation of the network structure. Each network university's definition of the role of the Office reflected their interpretation of the network and how it was to operate.

This was further illustrated by the affect of the arrival of Professor Robert Smith as the University of New England's Vice-Chancellor in 1990. Professor Smith's arrival saw a change in the University's interpretation of the federated network structure. Professor Smith grasped the network's difficulties in implementing a federative model within the context of the power of the members in the network's political economy and decided to pursue the network member autonomy model or what he called the "qualified autonomy governance model". The first change Professor Smith initiated was to investigate the role of the Office of the Vice-Chancellor.

At a meeting of senior University officers in Sydney on 7 June 1991, Professor Smith undertook to prepare a paper on the governing structure of the federated UNE with a particular reference to the role of the Vice-Chancellor and of the Vice-Chancellor's Unit. The paper was to be placed in the context of the qualified autonomy model proposed for the University.

The qualified autonomy governance model involved the devolution of greater autonomy and discretion to the network members, with concomitant accountability implications. In revising the University's interpretation of the network structure, Professor Smith considered it appropriate that the structure of the federation, and the roles and responsibilities of the Board of Governors, Vice-Chancellor and other senior officers (especially those who have responsibility for the two network members, the college, and the centre) were carefully examined.

In examining these issues, Professor Smith concluded that "for a devolved system to function
effectively, there must be agreement about the functions and responsibilities at these three organisational levels: University-wide, headquarters and member. Headquarters should therefore be more than 'simply a conduit through which papers pass". His paper proposed a more autonomous network model, however, member autonomy was to be qualified by a stronger and clearer role for the Office of the Vice-Chancellor. Professor Smith felt that to achieve a genuinely effective qualified autonomy, some key functions must be retained and discharged at the central coordinating agency level to ensure that the network operates as a coherent structure rather than as a collection of separate institutions pursuing their own individual destinies (complete autonomy). He concluded that the "sensible allocation principle", in terms of network governance structures, would seem to be policy at the Office of the Vice-Chancellor, and operations at the network members. The Office would retain a substantial coordination function for key issues (eg. the educational profile).

Professor Smith identified a number of threshold issues to be addressed in the implementation of a healthy devolved federal university:

1. Information Management.
2. University Identity
3. Adjudication and Resolution of Differences and Disputes
4. Appropriate Degree of Coordination at the Headquarters Level

The Vice-Chancellor concluded his paper with the following summary comments:

"This paper argues that UNE should adopt a qualified autonomy model of operation, based upon the principle of policy responsibility at Headquarters, operational responsibility at the campus. This should ensure a coherent federated University. The senior officers of the University who are the chief executives of network members, the college, or the centre, have significant university-wide roles and responsibilities, the proper discharge of which is crucial to the operation of the federated university. The Vice-Chancellor's role involves external liaison and university-wide coordination in key areas, reflected in the structure of his Unit. The devolution implicit in the qualified autonomy model should not reinforce isolation between campuses. Collaboration in learning, research, and service activities should in no way be diminished by this model."

Professor Smith’s paper was a good attempt to resolve the problems which were emerging at the University of New England with its federated network structure. He quickly grasped that the University’s federative model was not working and tried to change the University’s interpretation of the network structure to something like the network member autonomy model. He tried to achieve this by clarifying and refining the role of the Office of the Vice-Chancellor. The Office was the one area he had control within the network structure. He felt that by devolving more responsibility to the members he would address the network’s problems and meet their demands for more power and control within the network. He saw that the network member autonomy model had worked at the University of Western Sydney by satisfying the members’ needs for power and control within the network’s political economy.
and hoped that the model would work at the University of New England. However, Professor Smith failed to grasp that the University's problems involved the role of the network members rather than the role of the Office of the Vice-Chancellor. The members' battle within the network's political economy was destroying the University. The University's challenge was to resolve the resulting interorganisational conflict between the members by clarifying the role of the network members within the network structure. The Office of the Vice-Chancellor could have played a more effective leadership role not by clarifying its own role; nor by devolving more responsibility to the members; but by directly addressing the conflict between the members, clarifying their role within the network, and facilitating relations between the members.

Professor Smith was advocating the network member autonomy model adopted by the University of Western Sydney. It allowed network member operating autonomy within the constraints of overall University policy determined by the Office of the Vice-Chancellor and the Office's coordinating function. However, this model relies upon commitment from the members to the network in order for an appropriate balance between member autonomy and member interdependence. The University of New England's failing interorganisational relationships eroded member commitment to the network and undermined the network member autonomy model. The Office of the Vice-Chancellor should have adopted a stronger rather than a weaker role at that stage of the University's development. The network member autonomy model relies upon the members to manage themselves and to contribute to the management of the network as a whole. It is a tenuous balance of political forces which is held together by member interests within the network's political economy. The University of New England should perhaps have moved towards the centralised model adopted by Charles Sturt University which requires strong leadership and direction from the Office of the Vice-Chancellor. A version of the centralised model, at that stage of New England's development, may have brought the network together by imposing structures for coordination, collaboration, and cooperation. The Office of the Vice-Chancellor should have led this change in the network model. However, it may be argued that the network's political economy was simply too strong to allow a centralised model.

6.2.3 The Role of the Network Members

6.2.3.1 Introduction

The role of the network members within the federated network universities is part of the literature's studies on network structures. The nature of this role is determined by the degree of network member autonomy. The degree of member autonomy combines with the central coordinating agency's degree of control to define each network's interpretation of the federated network structure and its operation.

The essence of the network members' role within federated network structures is:
Network members want to retain their autonomy within the federated network structure, particularly over their day to day operations;

Network members allocate a degree of control or power to the central coordinating agency but expect services in return, particularly those services they could not perform as independent organisations;

Network members seek benefits or resources from being a part of the network structure;

Network members will use force, coercion, power and other political processes to gain the benefits or resources they seek from the network structure;

If the benefits of being a part of the network structure do not outweigh the costs, the network members will wish to withdraw from the relationship.

This raises a number of issues about the role of network members within federated network structures and suggests that:

1. Network members will compete for resources and authority within the federated network structure's political economy.
2. The member Chief Executive Officers, as their organisation's leader, will pursue resources and authority for their member and will use the political processes of the federated network structure to gain these resources.
3. Network members will expect the services provided by the central coordinating agency to outweigh the costs in having the agency.

The role of network members within a federated network structure is to pursue resources from the network and the authority to use these resources autonomously. The federated network structure's political economy is designed so that the network member Chief Executive Officers pursue resources and authority on behalf of their network member. The network's governance structure places the responsibility for pursuing member interests within the network's political economy with the CEOs. Therefore, the role of network members within federated network structures is largely determined by the role of the member CEOs. Their role, in turn, is determined by the degree of member autonomy and the interpretation of the network structure.

The network member autonomy model provides a high degree of member autonomy and a strong role for the member CEOs within the network's political economy. The federative model provides a balance between member autonomy and central control and a moderate role for the member CEOs within the political economy. The CEOs still pursue their member's interests but recognise the need for member interdependence and considering the network as a whole. The centralised model provides low member autonomy and strong central control and a weak role for the member CEOs within the political economy. Under these conditions, the network's governance structure makes no provision to pursue member interests within the political economy and member CEOs become Deputy Vice-Chancellors with a strong focus on network-wide issues.
6.2.3.2 The Role of the Network Members at the Three Network Universities

The role of network members within federated network structures is largely determined by the role of the member Chief Executive Officers. The CEO's role within any network structure will reflect the degree of member autonomy which, in turn, reflects the interpretation of the network structure. The role of the CEOs is, therefore, the key component of a network's governance structure because it defines the role of the network members.

The exchange perspective of Interorganisational Relations explains that organisations form interorganisational relationships in order to gain resources. The resource-dependency perspective explains how organisations pursue these resources within interorganisational relationships. The member CEOs, as the leader of their organisation, would be negligent if they did not pursue resources and authority for their network member. The federated network's governance structure establishes the CEOs as their member's advocate within the network's political economy.

The role of the member CEOs is determined by the degree of member autonomy. A high degree of member autonomy, such as that provided by the network member autonomy model, means that the CEOs have almost sole responsibility for the day to day operations of their network member. They contribute to the management of the network, as Deputy Vice-Chancellors, only on issues of network-wide importance such as strategic planning, finance and other policy issues affecting the network as a whole. Apart from managing their network member, their main role is to pursue resources and authority for their network member from the network's political economy. A moderate degree of member autonomy, such as that provided by the federative model, means that the member CEOs are responsible for managing their network member's operations but also have a strong role in managing the network. Under this model, the CEOs have key network-wide responsibilities in addition to managing their network member. While they still pursued resources for their member, they are more conscious of their network-wide responsibilities and try to consider the needs of the network as a whole before their network member's. A low degree of member autonomy, such as that provided by the centralised model, means that the CEO has little or no responsibility for managing their network member and a strong role in managing the network as a whole. The CEOs have key network-wide responsibilities and do not pursue resources for their network member. Resource decisions are made centrally by the Vice-Chancellor and decisions are made based upon merit taking into account the needs of the network as a whole.

The network member autonomy model means that the role of the network members is to operate as autonomous organisations pursuing resources from the network. The role of the member CEOs is to protect their member's autonomy and pursue resources for their member within the network's political economy. The federative model means that the role of the network members is to operate as partially autonomous organisations, pursuing resources from the network but conscious of the need to
consider the interests of the network as a whole. The role of the member CEOs is to pursue their member's interests within the network's political economy but to consider the needs of the network as a whole. The centralised model means that the role of the network members is to operate as integrated components of a single organisation. The role of the member CEOs is to contribute to the management of the network as a whole and not to place their member's interests before the interests of the network.

The most difficult task in defining the role of the member CEOs at each of the three network universities was in reconciling their dual, and often conflicting roles, of Deputy Vice-Chancellor and Chief Executive Officer. This reconciliation was difficult because the federated network structure places the CEOs in the conflicting and contradictory position of having to act in the interests of the network as a whole and to concurrently act in the interests of their network member. This dual role becomes impossible when decisions must be made which will affect members' pursuit of funds and authority within the network. The CEO is then faced with a decision of whether he or she is more negligent in failing his or her responsibility to the network as a whole or to their network member. While this decision is made easier by the University's interpretation of the federated network structure, the final decision is made by the individual themselves and indicates whether they place the network as a whole before their member's interests or vice versa.

The role of the network members was defined differently at each of the network universities. The difference in the role was defined by the different interpretations of the federated network structure. The University of Western Sydney and the University of New England defined their network members' role in terms of autonomy. The difference between UWS and UNE's definition of the role was in the degree of autonomy and the members' perception of other members' autonomy. Charles Sturt University defined the role of its members in terms of their contribution to the University as a whole. Charles Sturt largely ignored the notion of network member autonomy and referred to the members as campuses of the University. The members were integrated into the University to produce one single organisational entity and their role was defined in terms of the University's centralised network model.

At the University of Western Sydney, the Vice-Chancellor defined the role of the network members as being the locus of the "University Member Construct". Each member of the network is managed by its Chief Executive Officers who are assisted by its Academic Committee and other committees to implement University-wide decisions within the member. The other decisions taken within the member relate to its mandate to provide excellent higher education, research and associated community service. Each member has a clear role to promote and advance the work of the University in its geographic area and in its area(s) of specialisation. Each Chief Executive Officer is accountable for promoting cooperation and joint activities with other members and, of course, cooperation and collaboration with other Universities will also be fostered.

In his Follow-Up Paper, the Vice-Chancellor outlined the key roles of the Deputy Vice-Chancellors/Chief Executive Officers:
1) to support and assist the Vice-Chancellor in carrying out his University-wide role and

2) as the Chief Executive Officer of a University Member dealing with:

- Leading the operation of a Member within University-wide policies and guidelines.
- Planning and monitoring the operation of the Member.
- Representing the Member perspective on corporate planning, policy and resource acquisition and allocation.
- Representing the Member to its external communities.
- Matters affecting students.
- Management of the staff of the Member.
- Allocation of resources within the Member.

In addition, each Member has its own internal structure. For example, UWS, Macarthur has three principal committees: the Management Advisory Committee which comprises the twenty senior managers; the Academic Committee and the Macarthur Consultative Committee. Each of these bodies is advisory to the Chief Executive Officer.

The University of Western Sydney defined the role of its network members in terms of its network member autonomy model. It focussed on providing the members with the autonomy they desired and in doing so satisfied one of their two main objectives from the network structure: autonomy. The other objective - funds and resources - was pursued within the network's political economy. While the University has not truly resolved the potential problems and interorganisational conflict caused by its strong political economy, it has maintained a tenuous balance of forces. This has largely been achieved through the effectiveness of the Vice-Chancellor's leadership style and by the continued funding growth enjoyed by the University and therefore the members. However, while the University's definition of the role of the members satisfied the members' need for autonomy and maintained a tenuous balance of power within the political economy, it failed to address two critical issues which improve the performance of its network structure:

1) How to focus the network members' efforts on University-wide objectives rather than member specific objectives and therefore progress towards achieving synergy for the network as a whole;

2) How to resolve the role of network member CEOs, particularly in terms of effectively utilising their dual role as University-wide Deputy Vice-Chancellors and network member Chief Executive Officers.

Charles Sturt University resolved these problems with its centralised network model. The University decided that the best way to gain synergy from the federated network structure was to approach its management from the traditional management perspective of economies of scale. It embarked on a rationalisation of resources and academic and administrative systems which aimed to reduce waste and
duplication wherever possible. The role of the network members was to contribute to the University's integration by giving up functions and responsibilities to the network's centre - the Office of the Vice-Chancellor - for the benefit of the network as a whole. Charles Sturt solved the problem of defining a role for the network members by not giving them a role. They were simply integrated into the University as a whole. Charles Sturt resolved the problem of defining the role of the CEOs by assigning them University-wide responsibilities and functions and focussing their energies on this role rather than member specific issues. By employing the member CEOs as part of the network's centre and using them in network-wide roles, Charles Sturt effectively ended the role of the members within its network structure. The CEOs are the key to the role of the members within the federated network structure. The CEOs represent the members within the network, particularly its political economy, and the focus of their loyalties on the network as a whole rather than their member, removed the problem of defining the role of the network members at Charles Sturt.

The University of New England tried to resolve the role of its network members in the context of deteriorating interorganisational relationships between its members. In October 1991, Professor Smith wrote an article entitled Governance and Corporate Identity in Network Universities. This paper came three months after his earlier paper on the qualified autonomy governance model for the University. The period between the papers had seen further deterioration in the relationships between the network members and the qualified autonomy governance model had not resolved the network's problems. Professor Smith's paper focussed on the need for the University to establish a corporate identity which would help unify the members and provide a sense of unity they lacked. He felt corporate identity was of crucial importance internally as well as externally. However, he suggested that a corporate identity for a multi-campus network university does not necessarily mean a uniform identity. He understood that one of the fundamental problems in the relationship between UNE, Armidale and UNE, Northern Rivers was they considered themselves to be very different. They felt they had different histories, cultures, academic profile, and communities. Under these circumstances, it was difficult and perhaps impossible to forge a uniform identity. However, he still needed to determine how to develop a corporate identity and common bond between two institutions which considered themselves so different. Professor Smith suggested the answer lay in forging a deliberate commitment to diversity. This was a reasonable conclusion. The federated network structure did not require uniformity or even integration in the way Charles Sturt achieved. However, it did require the organisation to be more than separate institutions with no desire for cooperation, collaboration, or consultation. In defining the role of the network members under the difficult circumstances of UNE's deteriorating interorganisational relations, Professor Smith had to find a way to link the network members so they were more than separate organisations existing under the guise of being one. The reluctance of the network members to define their role in a way which improved their cooperation, collaboration and coordination meant that UNE failed to resolve the role of its network members in the face of deteriorating interorganisational relationships.
6.2.4 Academic Governance

Academic governance refers to the way the three network universities organised their academic decision making processes within the federated network structure. This section aims to compare and contrast the academic governance structures at the three network universities.

6.2.4.1 The Academic Board/Senate

The Academic Board or Senate is the principal decision making authority on academic matters at each of the network universities. The Board advises the Board of Governors on academic matters relating to teaching, scholarship and research. The Board's responsibilities are essentially the same at each of the network universities:

University of Western Sydney: "the principal advisory body to the Board of Governors on academic matters, and as such is responsible to the Board for the development of the academic policies of the University".  
Charles Sturt University: "the chief deliberative body on academic policy".  
University of New England: "the principal academic body of the University, with the right to advise the Board of Governors on all matters relating to teaching scholarship and research. It will be the primary mechanism for coordinating academic policy and programs throughout the University".

However, the Academic Board had varying degrees of success at each of the network universities. At the University of Western Sydney, the Board's role did not develop as it was envisaged. There were concerns that the Board was not providing the required level of input into academic policy and development. There was a perception that the CEOs, through their Academic Committees, were developing academic policy which was simply approved by the Academic Board and forwarded to the Board of Governors.

In April, 1992, the Chair of UWS's Academic Board, Professor Geoff Alcorn, prepared a paper entitled The Role and Operation of the Academic Board. The paper was written in response to "a widely held view within the University that the Academic Board is not fulfilling its rightful role as the peak body for academic decision making within the University and as the major source of advice on academic matters to the Board of Governors". Professor Alcorn highlighted the perception of the poor performance of the Academic Board when he suggested it "is generally viewed as being weak, passive and distempered within the federated network structure". Professor Alcorn suggested that the reason for the Board's ineffectual performance was the lack of clarity between the roles of the Board and the Corporate Management Team (CMT). The perception was that the CMT regularly pre-empted
decisions based on academic matters which should perhaps have been the prerogative of the Board.

Professor Alcorn made several proposals to revise the role of the Academic Board. He suggested that the proper role of the Board included such matters as:

- providing a forum for debate on matters of importance to the University,
- broad academic policy development,
- monitoring quality control and enhancement processes and performance across the University,
- broad educational planning and provision of advice to the Board of Governors on academic matters as the peak academic body within the University.

Professor Alcorn concluded with a number of specific recommendations and a matrix explaining the decision making authority of the Academic Board, the Academic Committee, and the CMT on eleven key academic functional areas. His paper illustrates how UWS's strong political economy frustrated the University's attempts to centralise academic decision making. The member autonomy model ensured that academic decision making was retained by the members by their CEOs and academic committees.

At Charles Sturt University, the performance of the Academic Senate is measured in terms of its contribution to the integration of the University's academic governance. The effectiveness of this performance was highlighted in the Vice-Chancellor's Performance Review Report which suggested that the Academic Senate had played a strong role in course and subject rationalisation. However, the key role in academic governance at Charles Sturt is played by the Deans and Faculties. The Vice-Chancellor's report on the administration of the University to the 6 May 1992 meeting of the Board of Governors indicated there was "strong and universal support for the faculty as the basic unit of academic governance". The allocation of responsibility for academic governance with the Dean and the Faculty did not devolve responsibility to the network members. Rather, it promoted central governance because the Deans and Faculties were University-wide or "trans-campus" in Charles Sturt's terms. This ensured that academic governance was then held centrally on behalf of the University as a whole.

The University of New England developed similar problems as the University of Western Sydney in the performance of its Academic Senate. The Academic Boards at UNE, Armidale and UNE, Northern Rivers played an important role in maintaining network member autonomy and in competing for resources (ie. new courses and new student growth) within the network's political economy. However, the main problem at UNE was representation on the Academic Board. At the University of New England, UNE, Armidale considered that it was the senior network member and therefore deserved greater representation and voting power. UNE, Northern Rivers felt that it had equal status within the network structure and deserved equal representation and equal voting power. This caused interorganisational conflict over the University's academic governance structure.
UNE's problems began with the Amalgamation Committee Report which failed to anticipate the problems with were to emerge. The Report's recommendations made several mistakes:

1. It recommended that all existing sub-aggregations of academic staff and resources - ie. the present departments, centres, schools and faculties - should continue to exist beyond the date of amalgamation.

   Within the constraints of existing commitments, the University should have undertaken a review of its academic governance structure as quickly as possible. The maintenance of the status quo created a sense of the network structure being no different from the previous structure.

2. It recommended that the present Academic Boards or their equivalents be dissolved as from day one of the new university and their functions transferred to the new trans-institutional Interim Academic Senate.

   This did occur, however, the member Academic Boards reformed when the interorganisational relations between the members deteriorated and the members felt they were not allowed sufficient input into the University's academic decision making. Their subsequent invitation to submit proposals on the de-amalgamation of the University, indicate that they retained a strong role within the University's academic governance structure.

3. It proposed to create four faculties at UNE, Armidale which were also to be major budget centres, each headed by a Dean; and which comprise the existing Departments of the University of New England and centres of the Armidale CAE; to create a single major academic budget centre at UNE, Northern Rivers incorporating five schools; headed by a Deputy Vice-Chancellor; and to coordinate cross-campus cognate academic activities through Joint Boards of Studies reporting to the Academic Senate.

   The creation of four faculties at UNE, Armidale and one academic budget centre at UNE, Northern Rivers caused immediate problems of status and power within the federated network structure. It suggested that UNE, Armidale was the senior network member and implied that UNE, Northern Rivers deserved only one fifth of the University's academic governance structure. The suggestion that the Deputy Vice-Chancellor at UNE, Northern Rivers be given the same academic governance responsibilities as Deans at UNE, Armidale was also a mistake because it diminished the responsibilities of the Deputy Vice-Chancellor at UNE, Northern Rivers.

In summary, only Charles Sturt University resolved the problem of how to include the chief academic decision making body within the network's governance structure. The Academic Board at both the University of Western Sydney and the University of Sydney failed to integrate the need for network
member input into academic governance with the need for central policy control. Charles Sturt resolved this problem because the centralised model allowed the Academic Board to play the key role in the university's academic governance structure. The University of Western Sydney's Academic Board failed because the network member autonomy model ensured the network member Academic Committees played a stronger role in the university's academic governance structure than the Academic Board. This meant that the Academic Board was forced to play a mediating role within the network's political economy rather than to integrate and lead the university's academic development. The University of New England failed to provide either a strong central leadership from the Academic Board or allow for a balanced member control of academic development. The university's academic governance structure promoted interorganisational conflict between the members by fuelling perceptions of UNE, Armidale being the senior network member.

6.2.4.2 The Faculty Structure

The Faculty structure was different at each of the network universities. This is not surprising considering the structure would be different at every Australian university in order to reflect the size of the institution and its academic profile. However, the differences between the network universities illustrated important distinctions in their academic governance structures and, in turn, their interpretation of the federated network structure.

The University of Western Sydney has a decentralised academic governance structure based upon maintaining network member autonomy and authority over academic decision making. There have been faculty reviews and restructuring of academic organisation at the member level, however, the academic governance structure has remained similar to that which existed prior to amalgamation.

The University has sixteen faculties each headed by a Dean. UWS, Hawkesbury has five faculties, UWS, Macarthur has five faculties, and UWS, Nepean has six. Many of the faculties are common to each network member, for example, UWS, Hawkesbury has a Faculty of Business & Land Economy (in addition to a Commerce Centre), UWS, Macarthur has a Faculty of Business & Technology, and UWS, Nepean has a Faculty of Commerce. Similar duplication exists throughout the University's academic structure and there are many examples of the same degrees being taught at each of the network members.

The faculties at each network member each have several Departments or Division. Department Heads report to the Dean. The Dean reports to the Deputy Chief Executive Officer and, in turn, to the Chief Executive Officer. The Deans are largely responsible to their member Chief Executive Officer, and to some degree the Academic Committee, for their governance of their faculty's academic activities.

The faculty structure at the University of Western Sydney is, therefore, a decentralised structure
Charles Sturt University has a centralised academic governance structure based upon integrating network member academic decision making. Professor Blake, in his October 1990 paper to the Board of Governors, made several recommendations concerning academic and administrative governance based on his intention to introduce common faculties and an integrated administration.

In presenting the recommendations for the University's new administrative and academic governance structure, Professor Blake told the Board of Governors that the five faculty model "brings together in the most logical way academic units with the greatest affinity...it is a model which is the least disruptive of present groupings...all faculties will be large enough to be efficient administrative units and be sufficiently diverse to provide for genuine academic interaction and inter-disciplinary pursuits". This illustrates how Professor Blake wanted to centralise his academic and administrative governance structures while causing as little disruption as possible.

Charles Sturt's faculties were designed to address three specific needs:

* to provide a participatory means to rationalise the course and subject offerings of the University, especially those offered in the external mode;
* to bring together small and disparate disciplines to provide the critical mass of staff needed for research and teaching, especially at the postgraduate level; and
* to provide a locus for academic activities and relationships and thereby to shift the emphasis from the potentially divisive campuses to the trans-campus Faculty.

The faculty structure at Charles Sturt University is, therefore, a centralised structure based upon integrating academic governance at the University-wide level.

The University of New England restructured its faculties based upon five major budget centres. At UNE, Armidale there were four faculties:

* Faculty of Arts
* Faculty of Economic Studies
* Faculty of Education/Nursing/Professional Studies
* Faculty of Science/Rural Science/Resource Management

At UNE, Northern Rivers there was one academic budget centre with five schools:

* School of Contemporary Arts
* School of Business and Computing
* School of Education
* School of Health Sciences
The Deans were the heads of faculties at UNE, Armidale and were responsible for providing academic leadership and to manage the faculty's budget. Departments or Divisions within the faculties were managed by Heads of Department who reported to the Dean. The Deans, in turn, reported to the UNE, Armidale Chief Executive Officer. This presented several problems in terms of perceived power and status within the network structure. UNE, Northern Rivers was effectively downgraded in academic terms because its Chief Executive Officer was accorded the same academic governance status as Deans at UNE, Armidale and its Heads of Schools were accorded the same status as Heads of Department at UNE, Armidale.

While the five faculty structure at UNE seemed to resemble that of Charles Sturt University, it was closer to the network member autonomy model than the centralised model. The faculties did not carry out university-wide functions and the Deans simply sought to gain resources for their network member and faculty within the network's political economy.

The faculty structure at the University of New England was, therefore, a decentralised structure based upon retaining academic governance at the network member level.

6.2.5 Administrative Governance

Administrative governance refers to the way the three network universities organised their administrative decision making processes within the federated network structure. This section aims to compare and contrast the administrative governance structures at the three network universities.

6.2.5.1 University-wide Governance

The Board of Governors has the main responsibility, in terms of the legislation, for the governance of the University as a whole, at each of the network universities. The Board has responsibility for determining and implementing University-wide decisions and policies. The Vice-Chancellor is accountable to the Board for implementing its decisions.

The Office of the Vice-Chancellor was responsible through the Vice-Chancellor to the Board of Governors for managing the University-wide governance at each of the network universities. The Office was led by each universities' Vice-Chancellor, who as the institution's Chief Executive Officer, was responsible for governing the University as a whole. In this sense, the Office of the Vice-Chancellor provided the structure for university-wide governance at each of the network universities.
However, the role of the Office of the Vice-Chancellor varied at each network university. At Charles Sturt University, it was the central authority and it governed the university on both university-wide and network member issues. At the University of Western Sydney, the Office of the Vice-Chancellor played a coordinating, service role on behalf of the network members. The Vice-Chancellor was the only position with authority over network member staff. The University's key decision making group, both in university-wide issues and network member issues, was the Corporate Management Team (CMT) which comprised the Vice-Chancellor and the three network member Chief Executive Officers. However, there is some confusion over whether the CMT is a part of the Office of the Vice-Chancellor or a separate group existing as another structure at the top of the organisation's hierarchy. If the CMT is considered part of the Office of the Vice-Chancellor, then the Office can be considered to have a very strong role in university-wide governance. However, the important point is that university-wide governance was heavily influenced by the network members, through the Chief Executive Officers and their membership of the CMT. At the University of New England, the Office of the Vice-Chancellor had similar problems as the University of Western Sydney. It tried to lead the university on university-wide issues and met with passive resistance, and even indifference, from the network members. The Office found it difficult to obtain cooperation or information from the network members and eventually failed to provide effective leadership on university-wide issues. UNE had a further problem that it did not develop a group, such as UWS's CMT, which could allow for input from the network members on university-wide governance. As a result, the university did not have the governance structures to determine or implement decisions which could have introduced university-wide benefits or cooperation and collaboration between members.

6.2.5.2 Network Member Governance

The responsibility for network member governance varied at each of the network universities. At the University of Western Sydney, the Chief Executive Officers had almost sole responsibility for the day to day management of their network member. At Charles Sturt University, the University's integrated, centralised structure meant that the network members were governed from the centre by the Office of the Vice-Chancellor and several administrative divisions operating across the university as a whole. At the University of New England, the network members were governed by their Chief Executive Officers. It was originally planned that the Office of the Vice-Chancellor would assume responsibility in a number of functional areas for the network members but this proposal never operated successfully.

The University of Western Sydney's network member governance was led by the Chief Executive Officers. Each CEO had a Deputy Chief Executive Officer largely responsible for academic activities at each member. However, this role evolved into responsibility for academic support and research and the Deans came to report directly to the CEO. The faculties were led by Deans and Departments and Divisions within the faculties were led by Heads of Division. Central administrative functions were led
by a Bursar or Secretary and academic administration was led by a Registrar all reporting directly to the CEO. Central administration and academic administration Divisions were led by Divisional Heads who reported to the Bursar/Secretary or Registrar.

This governance structure was similar at each of the network members. It was very similar to a traditional university structure in that there was a librarian in charge of the Library, an academic registrar in charge of academic administration, a computing centre manager, student services head, finance manager, properties manager, public affairs manager and so on. The critical point about the University of Western Sydney's network member governance structure was that each network member had the same, or very similar, structure. Therefore, there were three Librarians, three Academic Registrars, three Computing Centre Managers and so on. This network member governance structure reflects the university's network member autonomy model of the federated network structure.

Charles Sturt University's network member governance was led by the Office of the Vice-Chancellor and by administrative divisions for the University as a whole. Professor Blake, in his October 1990 paper to the Board of Governors, made several recommendations concerning administrative governance based on his intention to introduce common faculties and an integrated administration. Professor Blake indicated that:

"to support the work of the Faculties and Schools of the University including research, I am recommending the establishment of fifteen administrative Divisions, twelve of which will provide service and support across the University and three Member-specific service and support. These Divisions, like the Faculties of the University, are to be identified as primary cost centres and be characterised by receiving a one-line operating budget and by deploying conditionally, their own staff establishments".

The University of New England's network member governance was led by the Chief Executive Officer. UNE had a similar network member governance structure to UWS in the sense that its administrative structures were duplicated at each network member. UNE's network member governance, like UWS's, was designed to retain network member autonomy. However, the University began with plans of a governance structure closer to Charles Sturt's centralised model than UWS's network member model.

The University's Heads of Agreement asked the Amalgamation Implementation Committee to advise on "plans for the integration of administrative functions" which suggests that the University hoped to integrate some, if not all, administrative functions. The Amalgamation Committee's Report described plans for an organisational structure which had an Office of the Vice-Chancellor with "superordinate responsibilities for institutional affairs but with responsibility for policy implementation being devolved to network members headed by the Deputy Vice-Chancellors". The suggestion, in particular of superordinate responsibilities, suggests that the Office of the Vice-Chancellor would provide overall policy direction. However, the Committee recommended that "there be an Administration for each network member which reports to the relevant Deputy Vice-Chancellor". This statement indicated that
the network members wanted to retain control of their administrative functions.

The Amalgamation Committee, however, did intend to introduce some functions to be carried out by the Office of the Vice-Chancellor's Secretariat on a university-wide basis. It proposed an administrative structure for the Secretariat and the two network member administrations. The proposed structure was designed to distinguish the respective roles of the Secretariat and the two member administrations. The emphasis on the secretariat was to be upon providing support for policy development, governance and the conduct of institutional affairs; whilst the member administrations were to focus on policy implementation, operations, and the direct support of academic activity.

The anticipation that some functions would be centralised and performed on behalf of the university as a whole is illustrated by comments by the Amalgamation Committee such as "the determination of administrative structure at Northern Rivers will essentially involve a re-alignment of duties of staff to take into account of the transfer of some existing functions to the Office of the Vice-Chancellor".

The evolution of network member governance structures at the University of New England illustrates how the university began with hopes of a network model based upon providing some centralised functions but retaining network member autonomy and, when this proved unworkable, moved to a network member autonomy model. The university wanted its Secretariat to assume some network member responsibilities on behalf of the university as a whole but its political economy, more specifically the network members' efforts to retain autonomy and authority, frustrated the university's attempts to centralise functions.

### 6.2.6 Conclusions

The analysis provides some support for proposition 6. It is clear that members pursue resources from the network structure. They also pursue power and control within the network's political economy. Members desire power and control because it allows them to better pursue resources from the network and it also allows them the autonomy to decide how the resources should be used. Members pursue power and control through the network's governance structures. The analysis showed that the groups or individuals who controlled the network's resources, particularly in terms of making resource allocation decisions, had the most power and control within the network's governance structure. Therefore, it is reasonable to suggest that the ability to make and administer rules regarding possession, allocation, or use of resources will be a critical source of control within a federated network.

In terms of the weakness identified within the literature, there is some support for the proposition that the tension between coordination and autonomy within federated network structures needs to be
resolved. The federated network's governance structure creates a strong political economy. The political economy is the forum for the network to determine the role of the central coordinating agency and the role of the network members. These roles are largely defined by the degree of member autonomy and the role of the member Chief Executive Officers. The degree of member autonomy defines each federated network structure and determines the CEOs role. The CEOs play the network's critical role by determining an appropriate balance between network member coordination and autonomy. The CEOs, within the network's political economy, determine on which issues they pursue their member's interests and which to pursue the interests of the network as a whole. The appropriate balance between coordination and autonomy varies with each network model but the member CEOs have the power to decide whether their member pursues coordination or autonomy. The determination of an appropriate balance for each network model rests with defining the role of the member Chief Executive Officers. Certainly the role of the central coordinating agency, the role of the network members, and the academic and administrative governance of each network structure is heavily influenced by the member Chief Executive Officer's role within the network's governance structure.

6.3 Relationships Within The Network

6.3.1 The Relationship Between the Central Coordinating Agency (the Office of the Vice-Chancellor) and the Network Members

6.3.1.1 Theoretical Overview

The literature's exploration of the relationship between the central coordinating agency and the network members within a federated network structure has focussed on the role of the central coordinating agency in facilitating relations within the network. This facilitating role is an extension of the central coordinating agency's role in providing services for the network members. The agency is the focal point of the federated network structure in the sense that it should be the centre of interaction and interorganisational activity within the network. The relationship between the central coordinating agency and the network members should, therefore, be based upon the agency's efforts to improve coordination, collaboration, and cooperation between network members.

The relationship between the central coordinating agency (the Office of the Vice-Chancellor) and the network members was an important factor in the operation of the network structure at each of the three network universities. The analysis which follows will examine the relationship between the Office of the Vice-Chancellor and the network members using theoretical frameworks provided by Litwak and

Whetten suggests that the role of the central coordinating agency is closely linked with the concept of loose coupling. The loosely joined nature of relationships within federated networks causes researchers to focus on the role of the central coordinating agency because these organisations seem to be the structural glue that holds the network together. The central coordinating agency has established ties both within and outside the network structure. The agency develops and maintains relationships with each of the network members and it also develops and maintains relationships with key organisations external to the network. The agency therefore plays a crucial role in the interorganisational relationships within the network structure particularly in integrating the network members.

Litwak and Hylton suggest that the central coordinating agency's major purpose is to "order behaviour" between network members. They suggest the agency does this by "communicating pertinent information, adjudicating areas of dispute, providing standards of behaviour and promoting areas of common interest." The suggestion that the agency should "order behaviour" within the network implies a) that there will be a need to control the behaviour of network members within a network structure and b) that the central coordinating agency will have the power necessary to control member behaviour. Stern explored the options available to the central coordinating agency to impose punishments on members of a network for rule violations or behavioural misconduct. Stern also considered the role of the central coordinating agency to order network member behaviour through regulation. He suggested regulation is the "process of intentionally influencing some part of the activity of a class of organisations through the establishment of rules and procedures", which are administered by the central coordinating agency. Stern suggests that the network members are likely to seek strategies that undermine the regulatory control of the central coordinating agency "unless incentives are offered that induce conformity by stabilising the environment or permitting organisational growth".

This suggests that the central coordinating agency will have a regulatory control of the federated network structure with a sufficient degree of control to order behaviour between the network members. It also suggests that the network members will oppose regulation or control of their behaviour unless sufficient incentives are provided to induce orderly behaviour within the network structure. The incentives for coordination and cooperation between members are important to the ongoing success of the federated network structure. It appears that the main incentive for coordination is resource acquisition, however, apart from this, an understanding of the collective incentives for coordination between the members and the central coordinating agency is vital for knowing how the network can be effective.

In exploring the operation of the network structure at each of the network universities using the above theoretical frameworks, the research also aims to test a theoretical proposition within the literature and to examine some weaknesses of the literature.
The proposition is:

Proposition 7: The central coordinating agency within a federated network structure will play an important role in resolving or managing interorganisational conflict.

The weakness identified within the literature is the need to resolve the problem of what to do when the control agent is the primary source of conflict. The literature suggests the central coordinating agency has an important role in the coordination, cooperation and collaboration within a federated network structure. But this notion fails when the coordinating agency is seen by the network members as a reason for conflict. This might occur when the network members are not satisfied with the task performance of the central coordinating agency, the network members feel the material cost of establishing and operating the agency has not been offset by the benefits it provides, and or the network members resist the control of the agency and there is a battle for control of the network between the network members and the agency.

6.3.1.2 Facilitating Relations

Charles Sturt University was the only network university where the central coordinating agency successfully facilitated relations between network members. The University of Western Sydney's Office of the Vice-Chancellor initiated some activities between members but they largely operated as single institutions with little formal collaboration or interaction. The University of New England's Office of the Vice-Chancellor failed to facilitate relations between members. However, its greatest failing was that it did not resolve the interorganisational conflict between the members which is the focus of the next section of this research.

The literature suggests the role of the central coordinating agency (Office of the Vice-Chancellor) within a federated network structure should be to coordinate, facilitate, and to some degree, regulate relations between the network members. This suggests that the role of the Office of the Vice-Chancellor within the network universities should be to induce, monitor, and improve relations between the members. The member institutions were entirely separate organisations before they joined together to form their network universities. The single structural change which made their amalgamation different from existing as separate entities was the addition of a central coordinating agency or the Office of the Vice-Chancellor. In this sense, the Office of the Vice-Chancellor was the only component of the network structure (particularly in the early stages) which made the federated network university different from the members operating as separate organisational entities. Its role was to integrate the activities of the network members to produce synergy from the network. If the network could not produce synergy, the cost of being involved in the network would outweigh the
benefits and the members would achieve more as independent institutions. Therefore, the Office of the Vice-Chancellor had a critical role in justifying its own existence and the existence of the network. Clearly, if the network universities were to be successful the network members would need to interact and collaborate to some degree otherwise the members should have remained independent institutions. The network members expected the Office of the Vice-Chancellor to facilitate interaction and collaboration within the network structure. They expected the Office to coordinate the members' network-wide activities in order to achieve synergy. This was seen by the members as the Office of the Vice-Chancellor's main role and the relationship between the Office and the members was based, to some degree, upon the members' perception of how well the Office was performing this role.

Charles Sturt University was successful in integrating the network members and initiating interaction, cooperation and collaboration within the network structure. This was achieved mainly through the University's efforts to become an integrated organisation both academically and administratively. The creation of a common faculty structure and central administrative structures across the network caused staff to work with staff at other members and to discard the notion of working for their network member for the concept of working for the University as a whole. The Office of the Vice-Chancellor led the organisational change which created this centralised network model and, in this sense, played a successful role in facilitating relations within the network structure.

The University of Western Sydney had only marginal success in integrating the activities of its network members. Despite successes in some areas, the University's network members largely operated as separate organisational entities due to the University's network member autonomy model. The members demanded autonomy and, within the University's interpretation of the federated network structure, they expected to manage their day to day operations largely independent of operations at the other network members. The main interaction between staff across the network was informal in the sense that it was initiated, often without approval, by academic staff wishing to collaborate with colleagues at other members. Formal interaction between staff across the network occurred at the level of the political economy between the member Chief Executive Officers, and occasionally between other senior staff on working parties or committees to provide information for the Corporate Management Team. The Office of the Vice-Chancellor did not play a major role in initiating collaboration, cooperation or interaction amongst the network members and, in this sense, it failed to facilitate relations within the network structure.

The University of New England had little or no success in integrating the activities of its network members. The University began with anticipation that the Office of the Vice-Chancellor would play a key role in coordinating network member activities. There was an expectation of some structural change across the network leading to centralised functions in some areas. However, the University quickly became frustrated with the network members' reluctance to centralise functions. The problem at UNE was the members wanted autonomy in the same way as at UWS but UNE was further handicapped by the members' distrust of one another which caused interorganisational conflict. This led Professor Smith to aim for a devolved autonomy model which reduced the role of the Office of the
Vice-Chancellor and placed greater responsibility for facilitating relations within the network structure on the network members.

In summary, Charles Sturt University's Office of the Vice-Chancellor was the only one of the network university central coordinating agencies to succeed in facilitating relations between members but this was largely a result of the centralised network model adopted by the university. However, it is clear that the network universities' Office of the Vice-Chancellor did not perceive their role as facilitating relations within the network structure. Charles Sturt University's Office of the Vice-Chancellor saw its primary role as integrating the network members as one single institution and not to facilitate relations between autonomous network members. The University of Western Sydney's Office of the Vice-Chancellor saw its role as coordinating services on behalf of the network members. It saw its primary role as being the link between the University and external organisations, particularly government, rather than facilitating relations between members. The University of New England's Office of the Vice-Chancellor saw its role as similar to UWS's but with control over some centralised functions. The Office tried to improve relations between the members once their interorganisational conflict had become dysfunctional for the network. However, it should have anticipated the problems which emerged and been pro-active rather than re-active in proposing ways to improve relations.

6.3.1.2 Ordering Behaviour

Charles Sturt University was the only network university which had success in ordering behaviour between the network members. The Office of the Vice-Chancellor played an important role in this success. However, this was largely possible because the University's political economy was weaker than at the other two network universities. Charles Sturt's success was based upon the University-wide role of the member Chief Executive Officers, the University-wide governance structures, and the success in providing a resource allocation model equitable to all members. These factors combined to reduce the competition for funds and authority within the network structure and was the result of the integration of the University led by the Office of the Vice-Chancellor. There was interorganisational conflict and competition between the members but not at the levels experienced at the two other network universities.

The University of Western Sydney was moderately successful in ordering behaviour between the network members. The Office of the Vice-Chancellor did not play a major role in this, however, the Vice-Chancellor played perhaps his most important role in mediating and, at times, arbitrating between the three network members. The University had a very strong political economy with sometimes fierce conflict and competition between the network members for funds and authority. It is important to note that the network members felt that they should resolve conflict between themselves rather than the Office of the Vice-Chancellor acting as mediator. This reflects the members' desire for autonomy and control within the network structure. However, the Vice-Chancellor was often forced to mediate and
order the behaviour of the members in the CMT meetings which were the forum for the network's political economy. In this sense, the Vice-Chancellor performed exceptionally well in balancing competing member demands and ordering the behaviour of the network members. While the University's political economy often threatened to explode in public conflict between the members, the Vice-Chancellor, and to a lesser degree the Chief Executive Officers, succeeded in resolving the members' differences privately at the CMT meetings.

The University of New England failed to order the behaviour of its network members. The Office of the Vice-Chancellor could not resolve the differences between UNE, Armidale and UNE, Northern Rivers. This was largely due to the power of the University's political economy. The network members competed for funds and authority within the network structure with such force that the resulting conflict led to a complete erosion of the members' interorganisational relations and ultimately the de-amalgamation of the network. The Office of the Vice-Chancellor failed to order the behaviour of the members within the political economy because it did not have sufficient power within the network's political economy. It might be argued that the network members, and their Chief Executive Officers, undermined the power of the Vice-Chancellor and therefore made it difficult for him to improve relations within the network. However, Professor Smith made the crucial decision, when faced with deteriorating relations, to devolve more autonomy to the members when stronger central control or at least some efforts by the Office of the Vice-Chancellor to coordinate and integrate member operations, may have been a better alternative.

In summary, Charles Sturt University's Office of the Vice-Chancellor was the only network university central coordinating agency to succeed in ordering relations between members but this was largely a result of the centralised network model adopted by the university which significantly weakened the network's political economy. However, it is clear that neither the University of Western Sydney nor the University of New England's Office of the Vice-Chancellor had sufficient power to order or regulate member behaviour. They did not have the power to impose punishments on members for disorderly behaviour. This combined with the power of their political economies to ensure that the Office of the Vice-Chancellor could not order behaviour between the members. The University of Western Sydney's success at maintaining a tenuous balance of forces within its political economy was due to the mediating influence of the Vice-Chancellor at CMT meetings. It was also due to the maturity of the member Chief Executive Officers who accepted decisions and did not make public their grievances. The University of New England's Office was negligent in not anticipating and then acting on the disorderly behaviour of UNE, Armidale and UNE, Northern Rivers. However, it may be argued that the Office can be forgiven because it did not have the power to order member behaviour.

6.3.1.3 The Office of the Vice-Chancellor as a Source of Conflict

The Office of the Vice-Chancellor was a major cause of conflict within the federated network structure
at each of the network universities. This is an important finding because it contradicts the literature's suggestion that the central coordinating agency should facilitate and order relations within the network. The central coordinating agency is the network's single structural component intended to provide benefits for the network members. The finding that it instead produced costs and interorganisational conflict challenges the literature's empirical findings of the role of central coordinating agencies within network structures. It should also be noted, however, that interorganisational conflict is normal organisational behaviour within a federated network structure and, therefore, some conflict between the Office of the Vice-Chancellor and the members was to be expected. However, it is important that the level of this conflict does not become dysfunctional to the network's operation.

At each of the network universities, (however, less so at the University of Western Sydney) the relationship between the Office of the Vice-Chancellor and the network members was poor. The following analysis will examine whether the relationship was the fault of the Office failing in its role or whether it was the result of the role the Office was forced to play. The analysis will briefly consider the relationship at the University of Western Sydney and the University of New England before focussing upon the relationship at Charles Sturt University. Charles Sturt's Office of the Vice-Chancellor contributed greatly to the integration of the university and performed well in terms of the literature's criterion for the role of the central coordinating agency. However, it caused the greatest conflict of the three network universities' central coordinating agencies.

At the University of Western Sydney, the relationship between the network members and the Office of the Vice-Chancellor is positive. However, there is not a strong sense of trust and goodwill between the network members and the Office of the Vice-Chancellor. There are also signs that the relationship between UWS, Nepean and the Office of the Vice-Chancellor is poorer than at the other two members. However, there is not a strong sense of conflict between the members and the Office of the Vice-Chancellor largely because the Office understands the network members' need for autonomy. There has been resentment and occasional conflict between the Office and the members over resource allocation where one member felt another was being treated preferentially. There is also a sense that the Office is an unnecessary additional bureaucratic layer which costs more than it provides in benefits. However, the University has not experienced the strong sense of distrust and conflict experienced at the other two network universities. This was largely because the members were allowed to operate with autonomy. The members pursuit of authority and funds within the network's political economy caused interorganisational conflict between the members rather than with the Office of the Vice-Chancellor.

At the University of New England, the Office of the Vice-Chancellor experienced similar perceptions of being costly, ineffective, and wasteful as at the other two network universities. It did not cause strong feelings of animosity and antagonism as at Charles Sturt mainly because it did not pose a threat to either the network members or staff groups. The Office began with hopes of integrating the network university and providing an umbrella structure to coordinate University-wide activities. However, it
faced difficulties almost from its first day of operation. Both UNE, Armidale and UNE, Northern Rivers staff refused to cooperate and the Office found its work frustrated by its inability to gain information and other resources necessary to carry out its functions effectively. Neither network member was willing to give up autonomy or control over its activities to allow some functions to be carried out centrally by the Office.

In November 1991, Professor Smith's efforts to heal the rift at the University culminated in a paper on the governing structure of the federated university. Much of the dissent over amalgamation came from academic staff at UNE, Armidale who argued that the network of widely separated campuses was not delivering any academic benefits. Professor Smith's paper addressed this issue and the role of the Vice-Chancellor's Unit which had also come under heavy criticism for its size and cost. Professor Smith published his paper, in support of a continued federation, in the UNE Gazette. The paper was seen by some academic staff as a justification for continuing with the Vice-Chancellor's Unit and as a move to pre-empt a working party report on possible de-amalgamation of the network.

Professor Smith argued that the Office of the Vice-Chancellor should coordinate network-wide activities, adjudicate and resolve conflict between the members, integrate member activity by creating a University identity, and link the network to external organisations (Government). The paper argued that the University should adopt a qualified autonomy model of operation based on the principle of policy responsibility at the Office of the Vice-Chancellor and operational responsibility at campuses. Professor Smith felt this would ensure a coherent federated university. However, the Office failed to develop its role as Professor Smith had suggested.

The failure of the Office of the Vice-Chancellor was one of the factors later cited by Professor Smith in his paper to the 25 March 1992 meeting of the Board of Governors which analysed his view of five sources of tension within the network structure. He said in his report that while the Final Report of the Amalgamation Implementation Committee had proposed the possible location of various administrative functions, there was no clear explication of the difference between the Office of the Vice-Chancellor and campus-based functions in a federated network university.

In conclusion, the University of New England's Office of the Vice-Chancellor created conflict within the network structure because it was considered an unnecessary additional bureaucratic layer, wasteful, inefficient, and costly. However, it did not cause the same level of conflict as at Charles Sturt simply because it did not have the power to challenge the network members' autonomy. It was, therefore, largely ignored. The University's real problems were in the relationship between the network members.

At Charles Sturt University, the Office of the Vice-Chancellor was the main source of conflict within the network structure. The conflict within Charles Sturt's network structure involved staff who opposed the amalgamation for a wide range of reasons including perceptions of inefficiency, centralist governance structures, and reduced teaching resources. Staff found a voice for their discontent with the academic
unions who targeted their attack on the Office of the Vice-Chancellor.

In April 1993, academic staff union (FAUSA) described Charles Sturt as Australian higher education's "problem child" in terms of staff discontent and industrial disputes. The Union claimed that "in terms of its size, Charles Sturt ranks as Australia's most dispute-prone university, with a highly centralised and bureaucratic administration and a decline in campus infrastructure and resources". This discontent, it claimed, was manifested in a staff survey which was undertaken by the Charles Sturt University Academics' Union. It was entitled Survey of Staff on the Success of the Centralised CSU Model: Research Report. The survey represents one of the few public records of problems at Charles Sturt and helps to provide quantitative and qualitative data about Charles Sturt staff's perceptions of its network structure.

The report was introduced by stating that the academic unions had supported the amalgamation of the network member institutions to create Charles Sturt University. It stated "the Academic Unions from both former institutions had been active campaigners for the creation of the amalgamated Charles Sturt University as they argued that the marriage of similar institutions would be both harmonious and productive". However, this support was based upon the unions' understanding of the federated network model proposed in the initial discussions. The unions felt that the network structure "enshrined in the Charles Sturt University Act (1989)" was that of a federation with a loose central control and campus specific members. This implies that the unions had supported the network member autonomy model and had entered into the network believing that Charles Sturt would adopt the autonomy model.

However, the unions claimed that the University's senior management moved quickly towards a "highly centralised structure and practice". The unions' concern over the centralised network model was that it was not efficient or cost-effective particularly when "imposed upon geographically remote campuses". Furthermore, "this shift was further exacerbated by the uncosted but obviously significant costs of travel and communications". These concerns were directed at the cost of the Office of the Vice-Chancellor and the cost involved in maintaining relations within the network. Concern for these costs was common to all three network universities. However, the feeling that the network's cost inefficiencies were created by the Office of the Vice-Chancellor was strongest at Charles Sturt.

The survey was initiated following approaches by staff to the Executive of the Charles Sturt University sub-branch of the Academics Union. The union suggested that "a wide cross section of staff had expressed misgivings about the current direction and administration of the University". Staff concerns were heightened by the process of de-amalgamation at the University of New England and the subsequent publicly expressed reservations by the former Orange Agricultural College about the possibility of becoming part of CSU.

As a result, in February 1993 the Academics Union, in conjunction with the Executives of the two major support staff unions, decided to survey all staff members on the Mitchell campus concerning
their attitudes towards the amalgamation. The survey results were:

There were 328 valid responses, 74.4% of the academic and 61% of the support staff. The following summarises the results for both academic and support staff. Not every question was answered by each respondent and so percentages in most cases aggregate to less than 100%.

The results show that academic staff and support staff had similar responses. There was dissatisfaction with levels of efficiency, cost-effectiveness, education, and service delivery. Only 8 of the 145 academic respondents believed that the University was more efficient since amalgamation and only 9 considered it to be more cost-effective. There was, however, a group of respondents who, while answering negatively about the university’s efficiency and cost-effectiveness did not believe that de-amalgamation was desirable. Nevertheless, approximately two out of three staff (63.4% of academics and 65% of support staff respondents) believed that CSU, Mitchell should de-amalgamate.

The report concluded that "since the amalgamation of Mitchell with CSU there has been less efficiency or deterioration in cost effectiveness, a decline in the quality of education and services, and inappropriate use of resources, a lack of confidence in the Vice-Chancellor, and a clear mandate for Mitchell to de-amalgamate from the CSU network".

The survey revealed strong feelings of dissatisfaction with the University’s senior management style and with the Vice-Chancellor in particular. However, the unions suggested that the problems involved more than ‘management style’ alone “though this is obviously a major problem”.

It is important to note that following the survey, the academic unions still accepted that the member institutions could benefit more from being a part of the federated network Charles Sturt University than as independent institutions. While the survey indicated widespread staff concerns over the amalgamation, the unions accepted that "many staff concerns may, however, be able to be addressed without de-amalgamation". The unions felt that Charles Sturt’s difficulties were caused by the University’s interpretation of the federated network structure. Despite the survey results, the unions felt that “the federated model originally proposed for Charles Sturt may still be viable”. The unions felt that the centralised network model was causing the University’s problems and that a different network model "had the potential for creating more efficient and cost-effective structures and reducing the apparent demoralisation of staff”. The unions focussed their discontent upon the University’s Vice-Chancellor, Professor Cliff Blake, who they perceived as being responsible for introducing the centralised model.

In summary, the Office of the Vice-Chancellor was a source of conflict at each of the federated network universities. The Office was perceived as being costly, wasteful and inefficient and providing no real benefit for the network members. The conflict between the Office and the network members was strongest at Charles Sturt University. However, this was the result of staff discontent, expressed through the academic unions, over the centralised network model and the Vice-Chancellor’s
management style. The actual conflict between the Office and the members was low due to the integrated centralised network model. The conflict between the Office of the Vice-Chancellor and the members was reasonably strong at the University of New England. However, this conflict was passive rather than aggressive. The members refused to cooperate with the Office in the provision of information and other resources necessary to fulfil the Office's functions (e.g. reporting to the Department of Employment, Education and Training). The conflict never became aggressive as at Charles Sturt because the Office of the Vice-Chancellor did not have the power to threaten the members' autonomy and control within the network's political economy. The conflict between the Office of the Vice-Chancellor was weakest at the University of Western Sydney largely because the Office respected the members' autonomy and control within the political economy.

6.3.1.4 Conclusions

The analysis fails to provide support for proposition 7. The central coordinating agency at each of the network universities did not perceive their primary role as facilitating relations or ordering behaviour between the network members. Charles Sturt University's Office did play these roles to some extent but this was largely due to the nature of the centralised network model which required high levels of interaction between the members. The University of Western Sydney's Office saw its role as the major link between the network and external organisations, particularly in terms of reporting to Government. The Vice-Chancellor played a crucial role in mediating between the members at the Corporate Management Team meetings and, in this sense, he played a facilitating and mediating role. However, at both the University of Western Sydney and the University of New England, the network members' autonomy and control within the network's political economy meant that the Office of the Vice-Chancellor could not effectively play the role suggested by the literature. This suggests that the central coordinating agency within a federated network structure will not play an important role in resolving or managing interorganisational conflict.

In terms of the weakness identified within the literature, there is support for the proposition that there is a need to resolve the problem of what to do when the central coordinating agency is a source of conflict. The analysis has shown that the central coordinating agency was a source of conflict at each of the network universities. This is an important finding because it contradicts the literature's empirical investigation of the relationship between the central coordinating agency and network members within a federated network structure. Under these circumstances, the central coordinating agency should aim to convince network members that it provides more benefits than costs. In doing so, it should aim to facilitate relations between members, play a stronger role in regulating and ordering behaviour between members by devising an appropriate punishment for disorderly behaviour, and quantify the range of services it provides for the members, particularly those functions the members could not achieve as independent institutions.
6.3.2 The Relationship Between the Network Members

6.3.2.1 Theoretical Overview

The main theoretical framework used by this research to analyse the relationships between network members within the three network universities is the political economy derived from work by Benson (1975). The political economy is drawn from the resource-dependency perspective of Interorganisational Relations. It explains the political processes used by network members to pursue resources and power within the federated network structure. The analysis which follows examines the political economy by using three further theoretical frameworks: network member autonomy and control, Provan (1983), network member decision making or governance structures, Warren (1967), and interorganisational conflict, Molnar and Rogers (1979).

The literature's exploration of the relationship between network members within a federated network structure has focussed on interorganisational conflict, decision making within the political economy, network member autonomy and control, and methods for coordination and collaboration.

The federated network structure is a political structure which produces conflict and competition between network members seeking resources from the network. The network's political processes involve the use of power, force, coercion, and influence in the acquisition of resources. Network members who gain power within the political economy are able to use this power to gain resources and the authority to use these resources autonomously.

The analysis of network member control and autonomy within each network university uses theoretical frameworks provided by Provan (1983) and Dill (1958). Provan suggests that when an organisation becomes a member of a federation, it relinquishes at least partial control over decisions regarding those of its activities that are managed by the federation administration (the central coordinating agency). The agency generally allows considerable day to day operating autonomy for network members, but all members must act on behalf of the interests of the federation as a whole, at least regarding those issues managed by the agency. In return for general federation support, the agency acts on behalf of the interests of all members.

The degree of control enjoyed by the central coordinating agency and the degree of autonomy enjoyed by the network members is a critical factor in defining each federated network structure. Member institutions relinquish autonomy and control over their activities when they decide to join a network structure. They must not only accede some control to the central coordinating agency so that it can coordinate the network, they must also accept that they can no longer act independently without considering the needs and demands of their other network members. In return for this lost control, network members expect benefits from the network. A key to understanding the network's political economy is that the members will try to relinquish the lowest possible degree of control (autonomy)
and seek the highest possible degree of benefits (resources).

Network member operating autonomy is probably the most important principle in defining a federated network structure. Dill makes a distinction between upward and horizontal autonomy. In this research, the former is the freedom that the Chief Executive Officers have with respect to the Vice-Chancellor and the Board of Governors. The second is the freedom that they have with respect to one another or to one another's subordinates. The legislation which created the network universities provided a shared sense that the three network Chief Executive Officers would enjoy equal degrees of both upward and horizontal autonomy. They were equally accountable to the Vice-Chancellor and the Board of Governors and they were to respect each other's horizontal autonomy. The staff of each member were not directly responsible to the Office of the Vice-Chancellor staff nor to other member Chief Executive Officers. Dill concludes that upward autonomy is a key variable in the centralisation-decentralisation controversy. Similar conclusions may be drawn over the importance of autonomy to the federated network structure.

The analysis of network member decision making or governance structures within each network university's political economy uses a theoretical framework provided by Warren (1967). Warren provides a typology of inclusive contexts for decision making which are used to examine the network members' interorganisational behaviour at each network university. The four contexts are: 1) unitary, 2) federative, 3) coalitional and 4) social choice. The contexts are another way of expressing control and help further define each federated network structure. Under the unitary context, decision making involving policy and program takes place at the top of the organisational structure and final authority over the organisation rests there. The unitary context represents central control. A federated network structure with a unitary decision making structure resembles the centralised network model. Under the network member autonomy model, decision making is taken within the coalitional context. Each organisation has its own set of goals, but collaborates informally and on an ad hoc basis when some of its goals are similar to those of other organisations in the group. This structure allows decision making to take place at the level of the units themselves, as they interact with each other. The coalition context implies a great deal of member autonomy and control over key decisions and is the context desired by members within the network member autonomy model. The federative context represents a compromise between the two. Under this context, the member organisations have individual goals, but there is some formal organisation for the accomplishment of inclusive goals, and there is a formal staff structure for this purpose. The central coordinating agency represents the formal organisation within this structure. It plays a co-ordinating role between the members and represents a compromise between the central control of the unitary context and the decentralised control of the coalitional context. The social choice context represents a very loose association between the network members with formal contact only on those occasions when all member organisations can benefit.

The analysis of interorganisational conflict between network members within each network university's political economy uses a theoretical framework provided by Molnar and Rogers (1979). Molnar and Rogers suggest there are two major types of organisational conflict: structural and operating. They
outline three endogenous variables: interdependence, structural and operating conflict. Interdependence is defined as the extent to which organisations are linked by mutual exchanges or commitments on a continuing basis. Structural conflict occur over the basic identities and responsibilities that define a relationship and reflect an inability to establish or maintain the basic rules or principles that govern the relationship. Operating conflict occurs in the process of problem solving in interorganisational relationships and represents disagreements over the task expectations or role performance of a particular position or unit.

In exploring the operation of the network structure at each of the network universities using the above theoretical frameworks, the research also aims to test several theoretical propositions within the literature and to examine some weaknesses of the literature.

The propositions are:

Proposition 8: A federated network structure will result in conflict between network members.

Proposition 9: Cooperative interorganisational relationships within a federated network will occur when exchanges between members result in greater benefits than the costs involved in maintaining the relationship.

Proposition 10: In federated network structures which result in the loss of power and autonomy for network members, interorganisational conflict will result between the network members.

Proposition 11: Competition for scarce resources by network members within a federated network structure will result in interorganisational conflict.

Proposition 12: In a federated network structure, network members will be primarily concerned with the acquisition of funds and authority.

The weakness identified within the literature is the need to provide a more comprehensive empirical investigation of the use of political processes by network members in pursuing resources and power within federated network structures. There also needs to be further investigation of the relationship between network member autonomy, network governance structures, and interorganisational conflict between network members.
Network Member Autonomy and Control

Network members within a federated network structure will want to retain autonomy and control over their operations. This is because the member institutions were independent institutions prior to becoming a part of the network structure. They relinquish autonomy and control when they join the network because they can no longer act independently and must consider the implications for the other members and the network as a whole. However, the members will want to relinquish as little autonomy and control as possible.

The degree of network member autonomy is defined by the network model. The centralised model provides low member autonomy and high central control by the Office of the Vice-Chancellor. The federative model provides a balance between member autonomy and central control. The network member autonomy model provides high member autonomy and low central control. Provan suggests that control is the principal means of distinguishing a federated network from other types of networks. The degree of member autonomy and control then distinguishes between network models.

The degree of network member autonomy and control varied at each of the network universities. There was low member autonomy and high central control by the Office of the Vice-Chancellor at Charles Sturt University. The University of New England began with a balance between member autonomy and central control, however, this soon moved towards high member autonomy and low central control. The University of Western Sydney had high member autonomy and low central control.

The relationship between members at the University of Western Sydney was not affected by network member autonomy or control. This was because the members maintained a high degree of autonomy and control over their day to day operations. Members did not threaten other members' autonomy and member Chief Executive Officers respected their colleagues authority to manage their member. The University's network member autonomy model satisfied the members' desire for autonomy and therefore member autonomy did not cause conflict within the network structure.

The University of Western Sydney does have a very strong political economy. The strength of the political economy was created by the force with which the members pursued resources and power within the network. However, the political economy was held together by a very fine balance of power. The participants within the University's political economy were the member Chief Executive Officers and the Vice-Chancellor. The CEOs aimed to maintain their member's autonomy and to gain more control within the network structure. By gaining more control, the CEO could use political processes to seek an additional share of resources and other benefits for their network member.

The University maintained a sometimes tenuous harmony between the members largely due to three factors:
1) The influence of the Vice-Chancellor as arbitrator between the three CEOs.
2) The high degree of network member autonomy.
3) The continued growth of the University which ensured continued increases in resources for each network member.

The absence of any one of these three factors would have disturbed the balance of power and the political economy may have erupted. The presence of resource growth, in particular, often satisfied members who would have otherwise become disgruntled and attempted to upset the balance of power.

At Charles Sturt University, network member autonomy did not cause difficulties in the relationship between network members because the University adopted a centralised federated network model. Under this model, the members had low autonomy and the University was governed centrally in terms of both academic and administrative governance structures. The integration of the University and the appointment of Deputy Vice-Chancellors with a focus on University-wide responsibilities meant that the network members had no political process with which to develop a political economy. The network members did not have access to the decision making process and had little input into resource allocation decisions. The absence of network member autonomy severely weakened the University's political economy and therefore removed much of the potential for interorganisational conflict between the members.

At the University of New England, network member autonomy and control caused interorganisational conflict between the network members.

Professor Smith's arrival as Vice-Chancellor in 1991 saw a change in the University's interpretation of the federated network structure. Professor Smith grasped that the University's federative model was not working and tried to move the University toward the network member autonomy model or what he called the "qualified autonomy governance model". Professor Smith hoped that the network's problems would be addressed by allocating the members more autonomy.

In his paper to the 25 March 1992 meeting of the Board of Governors, Professor Smith identified five sources of tension that were then endemic in the University. They all involved network member autonomy or control within the network university and illustrate how important the member perceptions of their autonomy and other members' autonomy were to the deteriorating relations between the network members. Professor Smith's analysis contains several themes which were shown by this research to be fundamental to an understanding of federated network structures including the nature of the mandate/legislation, the interpretation of the network structure, and governance structures. However, Professor Smith's analysis shows that these issues have a common theme: network member autonomy and control.

Professor Smith felt there was a fundamental misunderstanding of the nature of the amalgamation,
particularly at UNE, Armidale. At UNE, Northern Rivers, it has been asserted repeatedly that the network was a federation of semi-autonomous institutions. Northern Rivers felt they had joined a University network and not amalgamated with the former University of New England as the former Armidale CAE had. At UNE, Armidale, (and particularly within the former UNE), the view was that the network was created with a clear commitment to the pursuit of unitary policies. In particular, Professor Smith felt the term "network" had enjoyed different interpretations at UNE. It had been suggested that support by the former UNE for the amalgamation was based on some assumptions about legislative provisions which proved to be quite different from those of the Act that was introduced into the Lower House in May 1989. The similarity between the UNE Act and the University of Western Sydney Act surprised many at the former UNE. They felt the legislation would reflect a far more centralised network model with the central power held by UNE, Armidale.

The two network members' different interpretation of the network structure had a number of implications. The federation model implies the linking together of relatively equal partners in a loose network structure. Professor Smith suggested that "this has not been accepted - implicitly or explicitly - at UNE, Armidale". He supports this research's findings that the original academic governance structure fuelled misconceptions about network member autonomy and control:

"Indeed, the original budgetary management structure, which obliged the Vice-Chancellor to allocate resources direct to four faculty cost centres - thereby bypassing the network member Chief Executive Officer - was, it seems, designed to achieve an equality of status between these cost centres and UNE, Northern Rivers".

Professor Smith further criticised the University's initial development of the network model:

"The amalgamation that created the new UNE did not follow any one of the four processes outlined in the Report of the Taskforce on Amalgamations in Higher Education: redesignation, sponsorship, incorporation, or university college. Rather, the process was to create a network, one member of which - the former UNE - incorporated the former Armidale CAE. Indeed, the former UNE was the only one of the pre-1987 universities in Australia involved in an amalgamation that did not emerge with a 'superior status', however defined".

These comments support this research's findings that the inclusion of a former university, the former University of New England, posed particular problems at UNE not experienced at the two other network universities. These problems were based upon perceptions that there should be different degrees of autonomy and control afforded to UNE, Armidale because it was a former university compared with UNE, Northern Rivers because it was a former college. Professor Smith had no doubts that this was the University's greatest problem. His view was that at the root of the conflict about the meaning of federation and network was the pervasive, if implicit view, that UNE, Armidale saw itself as having a 'supervisory' role in the network university.
Professor Smith also supported this research's findings that the legislation failed to adequately explain the federated network structure and how it was to operate. He felt "there was an imperfect appreciation of the implications of the legislation". He agreed that the legislation provided for network member autonomy, however, he felt "it is largely silent on implementation". He highlighted misconceptions about the role of the Vice-Chancellor as an illustration of the legislation's failings:

"...at UNE, Armidale, the perception of the Vice-Chancellor's role has remained largely unchanged from the pre-amalgamation period (a perception reinforced by the continued presence of the Vice-Chancellor and the associated functions on the campus of the former UNE, in the same building occupied by all previous Vice-Chancellors)".

The location of the Office of the Vice-Chancellor at UNE, Armidale, particularly in the office of the former UNE Vice-Chancellor, further fuelled the perception that UNE, Armidale was the senior member.

Professor Smith then reflected on his 'qualified autonomy governance' model and concluded that "the deliberate shift in governance processes and structures in mid-1991 to a more devolved model was intended to address the tensions evident at the time". He acknowledged that the model was not the solution to the network's problems:

"On reflection, the ability of the more devolved model to address the issues was limited for at least two reasons: the opportunity for devolution already existed but had not been equally recognised by each of the two network members (this very inconsistency led to tensions); and the existence of real and deep-seated cultural differences between two predecessor institutions from different sides of the former binary divide. These cultural contrasts compounded the difficulties at UNE, Armidale. While there was at least some unity of purpose at UNE, Northern Rivers and UNE, Orange Agricultural College - flowing from a relatively short but common heritage in the advanced education sector - the incorporation of the Armidale CAE into the former UNE created a UNE, Armidale without a corresponding unity of purpose. Indeed the adjustment at UNE, Armidale involved simultaneously coming to terms with membership of a federated network, as well as with an internal integration".

These comments capture the essence of the University's problems. The network member autonomy model can only work if the members accept and respect the autonomy and control of the other members. If members disagree about the degree of autonomy and control, the balance of power within the political economy will be disrupted each time a member tries to assert its perception of member autonomy and control. This problem is compounded by other factors including cultural differences and the integration of a former university with former colleges.

Professor Smith also suggested that the University's academic governance structure was ineffective because it failed to provide an input into academic decision making for UNE, Armidale staff. He suggested the abolition of the former UNE Academic Board in July 1989 and its replacement with a
University-wide Academic Senate, created an academic governance vacuum at UNE, Armidale: the four Faculty cost centres (two of which included several previous faculty or quasi-faculty bodies), reported directly to the Academic Senate. In contrast, the Combined Schools Academic Board continued at UNE, Northern Rivers and provision was made for a Board of Studies at UNE, Orange Agricultural College. These comments support this research's findings that the academic governance structure further fuelled misconceptions about the degree of member autonomy and control.

Professor Smith suggested that underlying the problems with the University's academic governance structure, was "a widespread scepticism, especially at the two network members (but not at UNE, Orange Agricultural College which has consistently supported the network University concept) about the academic advantages - real and potential - of the amalgamation.

Professor Smith's concluding comments support this research's findings that the University's legislation failed to explain the nature of the mandate. He suggested "the legislative framework for the network University is defective and contains a number of provisions that militate against the achievement of a cohesive corporate identity for the University as a whole". He argues that part of the legislation's failings was the role it set out for the Board of Governors. He had a conviction that "members of a Board of Governors must be trustees, not delegates, and that all processes and structures that compromise this implicitly or explicitly weaken the corporate basis of the University". He concludes that the Board of Governors' role was undermining the success of the University and his comments illustrate the importance of network member autonomy and control to the problems at the University. In essence, Professor Smith's comments recommended:

1. member Advisory Councils should be abolished,
2. Board of Governors members must be selected to fulfil a role as trustees and not member advocates,
3. member Chief Executive Officers should not be voting members of the Board of Governors,
4. the University should be considered one single institution with the members as component parts.

In conclusion, network member autonomy and control is an important factor in the relationships between network members within federated network structures. The strength of the political economy will influence the importance of member autonomy to the network's interorganisational relationships. The centralised network model's weak political economy will make member autonomy a relatively unimportant factor in the relationships between members. The federative model's moderate political economy will make member autonomy reasonably important. However, the network member autonomy model's strong political economy will ensure that member autonomy is a very important factor in a network's interorganisational relationships. A strong political economy can maintain good relationships between members if the degree of member autonomy and control is accepted and respected by each member. However, if members fail to agree on the degree of member autonomy, the political economy's balance of power will be disrupted each time a member tries to assert its
interpretation of the network's member autonomy and control.

6.3.2.3 Network Member Decision Making

Network member decision making is an extension of the concept of member autonomy and control. Members' power to make decisions will reflect their degree of autonomy and control. Members will want to retain as much decision making power as possible, particularly in terms of managing their day to day operations. Members will also want to have input into decisions affecting the network as a whole.

Warren's typology of contexts for decision making provide a framework for analysing network members' interorganisational behaviour within each network university's governance structure. Network members are involved in two decision making processes:

a) decision making involving their network member, and
b) decision making involving the network as a whole.

The first process is called member decision making and the second is network decision making. The degree of member involvement in each area helps define the federated network model and each members' role within the model. It is also an important factor in the relationships between network members.

The University of Western Sydney's network members wanted decision making within the coalitional context. The members wanted to retain control over their own activities but to have an influence on decisions which affected the University as a whole. Each member has its own set of goals, but collaborates informally and on an ad hoc basis when some of its goals are similar to those of other members. This structure allows decision making to take place at the level of the members, as they interact with each other. The coalition context implies a great deal of member autonomy and control over key decisions and is the context desired by members within the network member autonomy model.

The University's decision making structure allowed the network members, largely through their Chief Executive Officer, to have a high degree of control over decisions concerning their network member. The network member autonomy model allowed the CEOs to manage their member's day to day operations free of interference from the Office of the Vice-Chancellor or the Board of Governors. The members did not threaten the autonomy of the other members. This satisfied the members' desire for autonomy and, as a result, member decision making did not cause interorganisational conflict between the University's network members. The decision making structure also allowed the CEOs to have a high degree of control over decisions affecting the University as a whole. The network member
autonomy model allowed the CEOs to become involved in the management of the University and, in turn, the federated network structure. The CEOs' involvement in the network decision making was carried out as members of the University's Corporate Management Team (CMT). This group comprised the Vice-Chancellor and the three CEOs. The CMT provided the forum for the network members to interact within the University's political economy. The CMT was also the forum where the conflict and competition between the members emerged and, as a result, network decision making did cause interorganisational conflict between the University's network members. This conflict will be examined in the next section.

Charles Sturt University's centralised network model provided network members with decision making within the unitary context. Under the unitary context, decision making involving policy and program takes place at the top of the organisational structure and final authority over the organisation rests there. The unitary context represents central control.

The University's decision making structure did not allow the network members, or their Chief Executive Officer, to have a high degree of control over decisions concerning their network member. The centralised model allowed the Vice-Chancellor to manage the member's day to day operations through his management of the University as a whole. The Office of the Vice-Chancellor managed the University centrally through centralised academic and administrative governance structures. Member academic activities were largely managed by the Deans who had University-wide responsibilities and not member specific loyalties. Member administrative operations were managed by administrative heads who also had University-wide responsibilities and were not loyal to one member. The University's centralised network model did not allow member autonomy and, as a result, member decision making did not cause interorganisational conflict between the University's network members.

The decision making structure allowed the CEOs control over decisions affecting the University as a whole. The centralised model allowed the CEOs to become involved in the management of the University and, in turn, the federated network structure. However, the CEOs' involvement in the network decision making was carried out as the University's Deputy Vice-Chancellors. They were allocated University-wide responsibilities designed to focus their activities on the integration of the University and not on their network members' activities. While the CEOs were the nominal managers of their member's day to day activities, the centralised model focussed their energies on their University-wide role. The day to day management of the members was carried out centrally by the Deans and the administrative heads. The integration of the centralised model weakened the network's political economy and, as a result, network decision making did not cause interorganisational conflict between the University's network members.

The University of New England's network members wanted decision making within the coalitional context. The members wanted to retain control over their own activities but to have an influence on decisions which affected the University as a whole. However, the Office of the Vice-Chancellor wanted decision making within the federative context. Under this context, the members have individual goals,
but there is some formal organisation for the accomplishment of inclusive goals, and there is a formal staff structure for this purpose. The central coordinating agency represents the formal organisation within this structure. It plays a co-ordinating role between the members and represents a compromise between the central control of the unitary context and the decentralised control of the coalitional context.

The University of New England’s problems emerged in two areas. Firstly, the University began with an expectation that the network structure would operate within a federative decision making context. The Office of the Vice-Chancellor certainly had this perception. However, the network members soon came to feel that the network structure should have a coalitional context decision making context. Secondly, the network members did not agree of the role of each member within the coalitional context.

The University's decision making structure began by allowing the network members, largely through their Chief Executive Officer, to have a reasonable degree of control over decisions concerning their network member. The federative model model allowed the CEOs to manage their member's day to day operations with only a low degree of interference from the Office of the Vice-Chancellor or the Board of Governors. As the interorganisational conflict between the members caused the University to move towards the coalitional context, the members gained more control over their decision making under Professor Smith's qualified autonomy governance model.

The University's interorganisational relationships deteriorated because members threatened the decision making autonomy of the other members. UNE, Armidale assumed it would play a senior role within the network structure and, in doing so, would lead its more junior network colleagues toward University status. UNE, Armidale therefore was not satisfied with allowing UNE, Northern Rivers complete autonomy over its day to day activities. UNE, Northern Rivers, in turn, felt it was an equal member of the network and expected to have the same autonomy over its day to day operations as UNE, Armidale enjoyed. This difference in perception of the role of the members ensured that member decision making did cause interorganisational conflict between the University's network members. This conflict will be examined in the next section.

The decision making structure also allowed the CEOs to have a high degree of control over decisions affecting the University as a whole. The federative model allowed the CEOs to have some involvement in the management of the University and, in turn, the federated network structure. However, this involvement decreased as the interorganisational conflict between the members led to the adoption of the coalitional context.

The University's interorganisational relationships also deteriorated due to members' different perceptions of other members' degree of involvement in the network decision making. UNE, Armidale felt that it should have a larger influence in University-wide decisions due to its role as senior member and its size. It felt that it deserved to have more positions on key decision making authorities, such as
the Board of Governors and the Academic Board, than the other members. UNE, Northern Rivers felt that it was an equal network member and should have the same number of votes and influence on University-wide decisions.

The deteriorating relations within the network structure led the member CEOs to withdraw into the management of their member's operations and to ignore University-wide management. As the University's political economy became stronger and the conflict and competition between the members increased, the members withdrew from network decision making which is the inverse of what occurred at the University of Western Sydney. The reason for the members' withdrawal from network decision making was due to the member interorganisational conflict. The deteriorating relations caused the members to avoid interaction and to lose all commitment to the management of the federated network structure and therefore University-wide decisions. As a result, network decision making did cause interorganisational conflict between the University's network members. This conflict will be examined in the next section.

In conclusion, the University of Western Sydney and the University of New England adopted decision making within the coalitional context. However, New England began with an expectation of decision making within the federative context. Charles Sturt University adopted decision making within the unitary context. The unitary decision making within Charles Sturt's centralised network model did not cause interorganisational conflict between the members in either member decision making or network decision making. The University of Western Sydney's coalitional decision making within the network member autonomy model did not cause conflict in member decision making because members respected other members' autonomy. However, it did cause conflict in network decision making due to the strength of the network's political economy. The University of New England's coalitional decision making within its network member autonomy model caused conflict in both member decision making and network decision making because the members failed to accept or respect other members' decision making powers within the network's political economy.

6.3.2.4 Network Member Interorganisational Conflict

There was interorganisational conflict between the network members at each of the network universities. However, this was less so at Charles Sturt where the main conflict was between some staff and the Office of the Vice-Chancellor. The relationships between network members at each of the network universities in the period 1988 to 1993 was dominated by interorganisational conflict. This conflict was caused by a range of factors including the historical context of the development of the interorganisational relationships, the nature of the mandate, the interpretation of the network structure, the governance structures, and the political economy which was the result of the combination of these factors.
The interorganisational conflict within each network university's political economy will be explored in terms of three endogenous variables: interdependence, structural, and operating conflict. The analysis which follows will focus on the key issues which emerged in the interorganisational relationships within the network universities in the period 1988 to 1993.

6.3.2.4.1 Network Member Interdependence

Interdependence is defined as the extent to which organisations are linked by mutual exchanges or commitments on a continuing basis. Interdependence causes interorganisational conflict because it creates competition for resources. Assael (1969) suggests that conflict between organisations is an inevitable outgrowth of functional interdependence and the scarcity of resources. Assael is part of the school which argues that conflict should be managed and not avoided. He suggests that rather than continually seek solutions to the conflict, organisations should seek to manage the conflict and in some circumstances even encourage it. Assael suggests that conflict is an unavoidable process of interorganisational systems.

This research supports the proposition that interorganisational conflict between network members within a federated network structure is an unavoidable outcome of the network's political economy. Federated network structures create an almost unique process whereby member organisations are linked by a high level of resource interdependence yet they desire independence and autonomy. The structure brings together organisations which were previously independent and forces them to compete against one another for funds and other resources. The members would prefer to remain independent but recognise the need to be interdependent. This inevitably causes interorganisational conflict between the members because the members try to maintain their independence and the only occasion they interact with the other members is to compete for resources or other benefits from the network. The structure creates interorganisational conflict because the members are trapped between the independence they desire and the interdependence forced upon them by the network.

The interorganisational conflict caused by interdependence within the network is not only due to competition for resources. It is also caused by the tension between acting independently and acting on behalf of the network as a whole. A federated network structure should have a balance of member activities independent of other member activities with member activities interdependent with other member activities. The first case is where members operate as autonomous organisations and pursue their own objectives independent of the other members. The second case is where members accept they are part of a federated network structure and seek to work with other members to pursue objectives which could benefit the network as a whole. The first case can cause interorganisational conflict when members pursue their own objectives at the expense of other members or the network as a whole. The second case can cause conflict if members feel the network's objectives are being
pursued at the expense of their own objectives.

In an effective federated network structure, a balance needs to be achieved between member independence and network interdependence. The degree of interdependence within a federated network structure is determined by the network model. The degree of interorganisational conflict between the members varies depending upon the interdependence within the network model.

There was a reasonably high degree of interdependence at the University of Western Sydney because the members maintained a commitment to the network structure. While the members' main objective was to maintain autonomy, they recognised that their contribution to the network as a whole would produce benefits for them. Therefore, while the network member autonomy model encouraged the members to act independently, the members understood that there were occasions where they needed to act interdependently to produce benefits for them all. This type of activity included strategic planning, collaboration on common systems, academic profile, and providing strategic advice to the CMT on University-wide issues. The tension between wanting to act independently of the other members and the need to act interdependently occasionally caused interorganisational conflict between the members when a member felt another member was acting selfishly and without concern for the network as a whole.

The University's potential for interorganisational conflict caused by member interdependence emerged at the CMT meetings. The CMT was the forum for the members' interdependence. The CMT determined which member activities should be done independently and which interdependently. The CMT was also the forum for the network's political economy. At the CMT meetings, the member CEOs competed for funds and other benefits from the network. The most interorganisational conflict at the University of Western Sydney was caused by network members competing for resources within the network's political economy which, in turn, was created by the members' interdependence.

Charles Sturt University did not experience interorganisational conflict caused by member interdependence because it integrated member activities within its centralised network model. This removed the conflict between members caused by competition for scarce resources. Resource allocation decisions were made based upon the needs of the network as a whole.

At the University of New England, interorganisational conflict caused by network member interdependence was an outcome of the structural and operating conflict rather than a factor in the network's deteriorating relations. The structural and operating conflict combined to produce the interorganisational conflict between UNE, Armidale and UNE, Northern Rivers to the extent that the members no longer wanted to act interdependently. The University began with hopes of implementing a federative network model which maintained a balance between member autonomy and member interdependence. However, as the interorganisational relations within the network deteriorated, the members increasingly came to act independently of the other members and refused to act interdependently. The only occasions when the members acted interdependently was when
they were required to do so in order to determine resource allocation or other key strategic decisions affecting the network as a whole. While the University experienced similar interorganisational conflict between the members as the University of Western Sydney in terms of the members competing for resources within the political economy, interorganisational conflict caused by member interdependence was a less important factor in the University's deteriorating relations compared with structural and operating conflict.

In conclusion, network member interdependence caused interorganisational conflict at the University of Western Sydney and the University of New England. The main cause of conflict was when interdependence forced members to compete for resources. The University of Western Sydney also experienced conflict over the decision of when to act independently and when to act interdependently. The University of New England's interorganisational conflict was mainly caused by structural and operating conflict. Interdependence caused interorganisational conflict through members' competition for resources, however, as the network's interorganisational relations deteriorated the members increasingly acted independently of the other members. Charles Sturt University's centralised network model integrated member activities and weakened the political economy so that member interdependence did not cause interorganisational conflict between the members.

6.3.2.4.2 Network Member Structural Conflict

Structural conflict occurs over the basic identities and responsibilities that define a relationship and reflect an inability to establish or maintain the basic rules or principles that govern the relationship. Structural conflict between network members within a federated network structure is an unavoidable outcome if the visible and invisible network configuration is not understood and agreed by each of the network members before the network is created. If the network configuration is not clear to all network members and if there is not a common or shared understanding, structural conflict is an inevitable outcome of the federated network structure as the members attempt to develop their own network configuration. This causes interorganisational conflict between the members because each member enters the network with a different perception of the network configuration. The different perceptions involve the degree of control and autonomy of each member within the network structure. Each member's perception of their role within the network will be different to how the other members perceive their role. The structure creates this interorganisational conflict because the members try to impose their definition of the network configuration upon the other members.

When a network is created without a visible and invisible network configuration, the network members need to agree on a shared understanding of the network configuration as soon as possible. The configuration needs to begin by establishing the basic identities and responsibilities that define the interorganisational relationships between the network members and reflect an ability to establish or maintain the basic rules or principles that govern the relationship.
The University of Western Sydney was fortunate because it began with a reasonably clear understanding of the network member autonomy model. While chapter five showed that the University struggled to develop a visible and invisible network configuration, the members agreed that the University's network model should be based upon member autonomy. There was an agreed and shared understanding from the members that they would operate autonomously and respect one another's autonomy. This was a comfortable situation which suited the members because it meant they could operate as almost separate institutions within the network structure. However, the network required the members to be more than three separate institutions. The University experienced structural conflict between the network members as it tried to resolve the problem of how to gain synergy from a network structure defined by network member autonomy.

The University quickly developed a network configuration which addressed the member autonomy component of the network member autonomy model. The functions of the member Chief Executive Officers were to manage the day to day operations of their member and the members operated autonomously from the Office of the Vice-Chancellor and the other members. This configuration closely resembled each member's structure prior to amalgamation, where each member operated as a separate institution, which satisfied each member's desire for autonomy. However, it found the development of a network configuration which could gain synergy from the network much more difficult. If the members were to gain benefits from their relationships so that their combined efforts exceeded the sum of their individual efforts, the University had to determine a network configuration which maintained member autonomy but captured synergy from the members' interorganisational relationships. The network configuration had to find a balance of member independence and member interdependence. This caused interorganisational conflict between the members as they each tried to impose their definition of the visible and invisible network configuration on the other members. The University's members were uncomfortable when discussing member interdependence and they did not want to commit to activities which might centralise functions and therefore threaten their autonomy.

The perceived threat of developing activities which might gain synergy from the network was illustrated by the Vice-Chancellor's Report to Staff and Students on the University's Conference held from 7 to 9 July 1993. The Conference was held to review the University's mission, objectives and performance. The Conference involved a cross section of senior staff and students from throughout the University. The Conference's major item of discussion was the operation of the federated network structure and whilst the Conference affirmed the University's structure as a federated network, participants wanted to see more effective collaboration across the University.

The first item in the Vice-Chancellor's Report was entitled "The Federation, Cooperation and Collaboration". Its summary statement said:

*Participants wanted to build on the cooperative spirit which exists at grass roots level, seeking
stronger leadership without moving to centralisation”.

At the end of the Conference, participants suggested actions based upon the Conference’s findings. The list of actions provides an insight into the University of Western Sydney’s desire for collaboration but fear of centralisation. It also illustrates how important the federated network structure is to the University’s performance. The members need to relinquish some of their autonomy and control to allow more effective interdependence between the members. However, this Conference showed that the University is not yet ready to overcome its fear of centralisation and move towards increased interdependence.

Charles Sturt University avoided structural conflict between its members because its centralised network model was clearly understood and agreed by the members. Charles Sturt was fortunate because its centralised model closely resembled the traditional centralised university structure. This meant that staff could understand the structure and there was no confusion or disagreement between the members. However, Charles Sturt still had to develop a network configuration which achieved synergy from the network structure. It did this by centralising functions and removing duplication in its administrative and academic governance structures.

The University of New England’s structural conflict between the members was caused because the two main members, UNE, Armidale and UNE, Northern Rivers, entered the network with completely different perceptions of the federated network structure, its network configuration, and the interorganisational relationships within the network. UNE, Armidale felt that, as a former university and the largest member institution, it would assume a senior role within the network structure and have the most power and control within the network. UNE, Northern Rivers, assumed that it would have equal status with UNE, Armidale and therefore equal power and control within the network structure. These tensions emerged in June 1991 when academic staff at UNE, Armidale called for a “divorce” from UNE, Northern Rivers. They claimed Northern Rivers was less rigorous academically and had been better funded at their expense. A spokesperson for academic staff said, "Most of us can't see a single solitary benefit in it, only disadvantages”. This public expression of discontent within the network was the culmination of a complex range of factors contributing to the deterioration of relations between UNE, Armidale and UNE, Northern Rivers. The analysis which follows will examine the issues which led to the de-amalgamation of the network in terms of structural conflict. It will begin by analysing the results of three staff surveys to provide a time series analysis of the network's deteriorating relations and will conclude with the University’s response to the problems between UNE, Armidale and UNE, Northern Rivers.

UNE, Armidale academic staff organised three staff surveys on the University’s amalgamation: in 1988, 1991, and 1992. The results of these surveys are presented in order to compare and contrast staff feeling toward the amalgamation from its beginnings and toward its end.
and was returned by 505. The survey explored staff response towards the then proposed amalgamation of UNE with the other member institutions. It found that almost one in two respondents (46.9%) felt there were good reasons for UNE considering amalgamation and/or expansion along the lines of those outlined in the White Paper. One in four respondents (27.5%) felt there were not good reasons for amalgamation while a further one in four (25.6%) were not sure. A slightly higher proportion of academic staff were supportive of expansion than other staff. However, while respondents were generally supportive of UNE's expansion, they were not supportive of the proposed amalgamation with Northern Rivers CAE and, to a lesser degree, Armidale CAE. Slightly more than one out of two respondents (53.3%) felt that the proposed amalgamation between UNE, ACAE, and NRCAE was not a good idea. One out of four respondents (24.0%) felt it was a good idea while slightly less than one out of four (22.8%) were not sure. A slightly higher proportion of academic staff were opposed to the amalgamation than other staff.

Respondents clearly felt that the implications of the proposed amalgamation had not been fully explored. Three out of four respondents (76.8%) felt that the pros and cons of the amalgamation had not been fully investigated. Only one in ten (9.6%) felt the issue had been fully investigated while a similar proportion (13.9%) were not sure. Most respondents (87.1%) felt that the pros and cons of the amalgamation had not been adequately explained to staff and students at UNE. Only a small proportion (5.7%) felt that the amalgamation had been fully explained. Three out of four respondents (76.8%) felt that the views of academic staff at UNE should be canvassed before details of the amalgamation were finalised. Less than one out of five (15.0%) felt that staff should not be canvassed. Slightly more than one out of two respondents (56.8%) felt that the views of academic staff at UNE should be canvassed after details of the amalgamation were finalised but before its implementation. One out of five (19.0%) felt this was not necessary while one out of four (23.8%) were not sure. Three out of four respondents (74.5%) felt that the University's name, the University of New England, was not negotiable in the proposed amalgamation.

The survey's results clearly demonstrate that UNE staff entered into the network structure with concern about whether it was a good idea and whether the implications had been fully explored. The majority of staff certainly did not support the proposed amalgamation with Northern Rivers in 1988.

The second staff survey was held in June 1991 in response to widespread concern over the future of the amalgamated University and to coincide with the arrival of the new UNE, Armidale Chief Executive Officer, Professor Cliff Hawkins. The survey was designed to test the opinions of academic staff throughout the University on its future composition. It asked whether UNE, Northern Rivers should continue to be a part of the University of New England. The response rate was:

- UNE, Armidale: 412 from 580 staff (71%)
- UNE, Northern Rivers: 54 from 174 staff (31%)
- UNE, OAC: 21 from 35 staff (60%)
UNE Total 487 from 789 staff (62%)

The survey’s question was: “Considering all that you know at present, and putting aside the question as to whether the University of New England should remain a network institution, do you think it should continue to include the campus at Northern Rivers?”

The majority of respondents (89%) at UNE, Armidale answered no. Only a small proportion (5%) answered yes while a similar proportion (6%) were not sure. Almost one out of two respondents (48%) at UNE, Northern Rivers answered yes. Two out of five (40%) answered no and a small proportion (12%) were not sure. The majority of staff (86%) at UNE, OAC answered yes while small proportions answered no (5%) or were not sure (9%). In total, four out of five respondents (80%) felt that Northern Rivers should not continue to be part of the University, a small proportion (13%) felt that it should, while a smaller proportion (7%) were not sure.

The survey’s results clearly show that, in 1991, staff were opposed to Northern Rivers’ continued role as part of the University of New England’s federated network structure.

The third survey was carried out in April 1992. Referendum papers were distributed to all staff on the UNE, Armidale campus with two questions:

1. Do you support the case for separating the Armidale and Northern Rivers campuses, leading to the creation of two independent institutions: one based in Armidale, the other in Lismore?

2. If your answer to section A was “No”, do you support substantial alterations to the amalgamation arrangements under which the existing institutions operate?

956 staff responded to the survey, of which 1 was informal and another 37 were disqualified because of ineligible envelopes. The results were:

Almost all respondents (90.8%) answered yes to question 1. Of those who answered no to question 1, a further 4.4% answered yes to question 2. Only a very small proportion (2.7%) answered no to both questions 1 and 2. The survey concluded that “the ramifications of this survey result should not be underestimated. The referendum indicates that only 25 of the 918 staff who cast valid votes believe there should be no change to the structure of the University”. It concluded that “along with resolutions carried recently by Advisory Councils and Academic Boards at both Armidale and Lismore, these results carry a clear message about the feelings of the academic and general communities of the two institutions about the need for change”.

The survey’s results clearly indicate how staff had become increasingly dissatisfied with the network structure to the point where most supported de-amalgamation. In presenting the results to staff, UNE, Armidale CEO, Professor Hawkins, wrote in support of de-amalgamation. He said:
"I see little value in remaining stuck in endless arguments over whether or not there are advantages in a link between Armidale and Lismore...the two networked members of the University...have made very clear statements to the Board of Governors: the Lismore campus should be established as an independent tertiary institution separate from the University of New England...the adoption of this position has led to a very positive feeling on both campuses that the problems which had been consuming people's time and energies were behind them and at last they could work to maximise the opportunities of the staff and students to achieve the distinct missions they have established for their individual campuses".

These comments reveal a great deal about the motives for de-amalgamation at that time. Professor Hawkins obviously felt that there were not advantages in maintaining the interorganisational relationship between UNE, Armidale and UNE, Northern Rivers. He also revealed how clearly each member felt they were separate institutions with "distinct" and "individual" objectives.

As the interorganisational relations within UNE's federated network structure worsened, the University's senior management, largely through the Vice-Chancellor, Professor Robert Smith, tried to improve relations by developing a network configuration which would satisfy both members. His challenge was "to convince people that we have a better future together as a network university".

On 31 July 1991, despite earlier warnings to staff that dissolution of the existing UNE would be a serious mistake, Professor Smith established a taskforce to examine the proposal. The taskforce was announced after a long-awaited meeting of the university's Academic Senate decided to recommend to the Board of Governors that the de-amalgamation go ahead. The Senate, which included members from the Armidale, Northern Rivers and Orange campuses, voted 33 to 14 in favour of dissolving the amalgamation, with 20 members - mostly from Northern Rivers - abstaining. In a prepared statement, Professor Smith said the standing committee of the Board of Governors had resolved to establish the taskforce "to assemble relevant information on all of the implications of dismantling the UNE in whole or part". He said the taskforce would consist of himself, the University's Chancellor, Dr Rob Robertson-Cunninghame, the Deputy Chancellor, Mr Lionel Phelps and, possibly, coopted external advisers and consultants: "I would like to emphasise that the taskforce is to assemble facts rather than to canvass opinions and attitudes or to form judgements". The latest developments followed a build up over the past two months including a staff survey at Armidale showing few staff members there want the amalgamation to continue. Armidale's Academic Board and the Northern Rivers Advisory Council had also both voted in favour of dissolution.

The report of the taskforce was presented to the 12 August, 1991 meeting of the Board of Governors. The Taskforce had been asked by the Board to assemble information on the implications of dismantling the amalgamated University. The Report argued that there would be serious funding consequences if the network was dismantled. The Report was the basis for discussion preceding a vote on continuation of UNE in an amalgamated form. The parameters set by the Board for the
The first issue explored by the report was the implications of de-amalgamation in terms of the Unified National System's (UNS) size criteria. The criteria was a key factor in motivating the member institutions to join together to form a larger institution and it was clearly an important factor in assessing the implications of de-amalgamation. The Taskforce's analysis considered the different scenarios from de-amalgamation in terms of whether the resulting configurations would meet the UNS's size criteria for membership. It found that neither UNE, Coffs Harbour Centre nor UNE, Orange Agricultural College would qualify for separate, individual membership. The different scenarios were (in terms of EFTSU and therefore size):

<table>
<thead>
<tr>
<th>Chart 1</th>
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<tbody>
<tr>
<td>1.3.1 UNE, Armidale</td>
</tr>
<tr>
<td>1.3.2 UNE, Armidale UNE, Coffs Harbour Centre UNE, OAC</td>
</tr>
<tr>
<td>1.3.3 UNE, Northern Rivers</td>
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<tr>
<td>1.3.4 UNE, Armidale UNE, Coffs Harbour Centre UNE, OAC</td>
</tr>
<tr>
<td>1.3.5 UNE, Armidale UNE, OAC</td>
</tr>
<tr>
<td>1.3.6 UNE, Northern Rivers UNE, Coffs Harbour Centre UNE, OAC</td>
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<tr>
<td>1.3.7 UNE, Northern Rivers UNE, OAC</td>
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<tr>
<td>1.3.8 UNE, Northern Rivers UNE, Coffs Harbour Centre UNE, OAC</td>
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The Report concluded that the plausible successor institution combinations were:

a) 1.3.1 (7,190) and 1.3.8 (3,390)
b) 1.3.2 (7,985) and 1.3.3 (2,595)
c) 1.3.4 (7,375) and 1.3.7 (3,205)
d) 1.3.5 (7,800) and 1.3.6 (2,780).
The Report concluded that the legislative implications of dismantling the University would be either or both of new legislation and amendments to the existing legislation, approval from the relevant State Minister (the Hon. Virginia Chadwick, Minister for Education and Youth Affairs), appropriate consultation with relevant Government officials, and Cabinet approval. As a result, the Taskforce indicated that any date for any dismantling decision could not be made earlier than 1 January 1993.

The Report concluded that the dismantling would have significant resource implications for the member institutions. Both State and Commonwealth officials had declared that a decision to dismantle the present UNE would prompt a complete reconsideration of 1992 and 1993 funding commitments, recurrent and capital. The Report considered four scenarios involving EFTSU and funds for each of the four plausible combinations of successor institutions outlined above. The first scenario included base load plus growth as planned in 1992 and 1993. The second involved base load with no growth in 1993 and 1993. The Report concluded that this scenario would define the worst possible outcome from de-amalgamation. The third scenario reflected the allocation of 1992 and 1993 growth according to regional priorities (allocated new growth to Northern Rivers). The final scenario was to allocate all growth to a successor institution that included UNE, Armidale.

The Board voted 15 votes to 5 to retain the network. The Board's vote was influenced by financial considerations, as the meeting was told a break up of the network would prompt reconsideration of Federal funding and capital works. The motion read:

"The BOG re-affirms its commitment to the effective operation of a network university. In order to ensure this, the Board will address the issues to the motions from the Academic Senate and the Northern Rivers Advisory Council."

The Vice-Chancellor's paper to the 25 March 1992 meeting of the Board of Governors included an overview of the future of the University of New England, an analysis of five sources of tension within the network, some concluding thoughts and recommendations.

Professor Smith's paper began by asking whether the University might be better served by a different structure than the federated network:

"As the end of the third year of amalgamation draws to a close, an alarming amount of energy is being dissipated in conflict, especially between the two network members. Regrettably, the University's ability to meet the expectations of its key stakeholders - students, staff, communities is increasingly compromised by the very real tensions that have emerged".

Professor Smith felt the University's interorganisational relationships were constrained from the beginning by "a pervasive lack of trust, especially between the two network members. (This has found expression as conflicts over resource allocation, admission and academic standards generally, and
program duplication, as well as in the failure of joint enterprises, such as the MBA). The lack of trust was compounded by a perceived lack of commitment to the amalgamated University. Professor Smith suggested that this was:

"...reflected in behaviours and outcomes that can be explained at least in part by the different understandings of the amalgamation. The then Minister's letter to the Principal, Northern Rivers CAE in November, 1988 legitimised the concept of a transitional presence only for UNE, Northern Rivers in the amalgamated university. The reference to a 5,000 EFTSU enrolment target for UNE, Northern Rivers by the mid 1990s also is interpreted by some in the same way".

The lack of trust and commitment to the network had led to a situation which required the University to reconsider its network configuration. Professor Smith argued that "in my view, the instability of the University in its present form has reached such a critical stage that a review of the structure of the University is needed. Any restructuring that may result from such a review should not be seen as a punitive outcome because of shortcomings in the structure and functioning of the network University. Rather, it should be seized as an opportunity to create an institution or institutions that will be responsive to the needs of their several communities: the north coast, the tablelands, and the central west, as well as a wider state, national and international constituency". Professor Smith's previous approach to the University's deteriorating interorganisational relationships had been to reconfigure the network structure by providing more member autonomy in what he called the "qualified autonomy governance model". However, he now recognised that increased member autonomy had not satisfied the members because they did not agree on the basic identities and responsibilities that defined member relationships.

The structural conflict between UNE, Armidale and UNE, Northern Rivers had reached a point where Professor Smith considered that a structural review of the University was critical. He stated "it is my view that the Board of Governors should inform the State and Commonwealth Governments that a searching review of the structure of the University is to be undertaken without delay".

In late 1992, Professor Smith had accepted that he could not improve the relationships between the network members and de-amalgamation was inevitable. He then tried to facilitate de-amalgamation as quickly and as painlessly as possible.

In summary, the level of structural conflict between network members varied at each of the network universities. It was highest at the University of New England where the two main network members had completely different perceptions of how the federated network structure would operate. UNE's problems occurred because UNE, Armidale and UNE, Northern Rivers had vastly different interpretations of the University's network configuration. Armidale saw itself as the senior member within the network structure while Northern Rivers saw itself as having equal status and power. The University's structural conflict escalated because it failed to resolve its need for an agreed and shared understanding of both the visible and invisible network configuration. The structural conflict was lower
at the University of Western Sydney where the members entered into the network with the hope that they would retain member autonomy. The network member autonomy model satisfied the members' need for autonomy and therefore controlled the level of structural conflict. However, the members failed to understand that, in order to be effective, the federated network structure required more than independent institutions acting autonomously. In order to gain synergy and other benefits from the network structure, the members needed to resolve the problem of how to cooperate and collaborate with the other members. The University's structural conflict was caused by the difficulties in developing a network configuration which resolved the tensions between maintaining member autonomy and member interdependence. The structural conflict was lowest at Charles Sturt University which resolved confusion and uncertainty about the network configuration by adopting a centralised network model. The centralised model did not create structural conflict because it resembled the traditional university structure and its network configuration was, therefore, easily understood. However, the University still had to resolve the problem of how to integrate two previously separate organisations. This process was helped by a shared and common understanding from the network members about the University's network configuration.

6.3.2.4.3 Network Member Operating Conflict

Operating conflict occurs in the process of problem solving in interorganisational relationships and represents disagreements over the task expectations or role performance of a particular position or unit. Operating conflict between network members within a federated network structure is also an unavoidable outcome if the visible and invisible network configuration is not understood and agreed by each of the network members before the network is created. Confusion and ambiguity over the network configuration causes uncertainty and conflict over task expectations and role performance within the network. However, the main operating conflict within a federated network structure is caused by differences in network member perception of the role of other members. This causes interorganisational conflict between the members because each member enters the network with a different perception of its role and the role of the other members. This most often involves political processes and notions of status and power within the network's political economy. It causes interorganisational conflict because the members try to impose their definition of their role and the other network members' role upon the other members.

Federated network structures need to resolve the task expectation and role of the central coordinating agency and each of the network members. This will be defined by the network model and the network configuration. Members then need to agree on a shared understanding of each members' role and tasks within the network structure.

The University of Western Sydney had a reasonably low degree of operating conflict between
members. This was because the members largely operated as autonomous institutions and the member Chief Executive Officer had almost sole responsibility for managing the members day to day operations. The University experienced some operating conflict between the members and the Office of the Vice-Chancellor in clarifying the latter's role. It is also clear that the University has never been comfortable with the configuration of network-wide and member specific functions of the Chief Executive Officers. This has not caused strong operating conflict between the members because the University's network model is based upon member autonomy and this has been reflected in the task expectation and role performance of the Chief Executive Officers. The University still has to resolve how to gain synergy from the network structure and, in order to achieve this, it must resolve the operating conflict of how to increase the task expectation and role performance of the Chief Executive Officers in network-wide activities.

This analysis has thus far shown that there was very little interorganisational conflict between Charles Sturt University's network members. However, Charles Sturt did experience problems with its network model. Its interorganisational conflict mainly involved the Office of the Vice-Chancellor and while this has been examined in the previous section, it is discussed here because the conflict involved disagreements over the task expectation or role performance of the Office of the Vice-Chancellor. The analysis which follows provides a concluding overview of Charles Sturt's interorganisational conflict.

The most serious conflict at Charles Sturt occurred between staff unions and the University's senior management. On 7 August 1990, an academic union representative called the amalgamation to form Charles Sturt University 'disastrous'. According to the Academics Union at the Bathurst campus of CSU, the amalgamation had resulted in increased overheads, time wasted in inter-campus travel, and unnecessary over-enrolments at all three campuses, especially Mitchell which had the highest over-enrolment in NSW. The Union at the Wagga Wagga campus said "there were no problems on an academic level and no feeling that there were second class academic citizens in the network, as seemed to be the feeling at the University of New England, but it felt that the centralised bureaucracy which had been installed following the amalgamation was a real problem". The Union added, "We expected a federated model of administration but the Board of Governors and Professor Blake went for a centralised model which they got through Council". It is important to note that the network members clearly did not feel they were in competition or conflict with the other members. The unions were concerned over the University's interpretation of the federated network structure.

The Unions' objections illustrate some of the major problems of the centralised network model. The travel costs are common to all federated network structures and are necessary due to the distance between the members and the need to interact. The promise of autonomy which was not realised by the centralised model only becomes a significant problem if the network structure provides a political process for the members to fight to retain their autonomy. The centralised model does not allow this political process because the members' advocates - the CEOs - are focussed upon their University-wide rather than member specific responsibilities. Their lack of political power within the network's political economy is illustrated by the comment that "it is difficult to get decisions out of the Deputy
Vice-Chancellors". The use of the term Deputy Vice-Chancellors is also significant. Union representatives at the University of Western Sydney or the University of New England would almost always refer to them as Chief Executive Officers. The final point concerned the decision making structure based upon two layers of administration: the Office of the Vice-Chancellor and the Faculties. This reflected the centralised model's governance structure and, despite the unions' criticisms, it was a flatter structure than that at either of the two other network universities. However, the effectiveness of this structure relies upon the management skill of the Deans. As the centre's representatives at the members and largely responsible for academic governance across the University, the University's performance largely depends upon their talents as managers and not academics.

An underswell of staff discontent with the University's strong centralised style of management surfaced again in April 1993 when the staff survey analysed above found that 63% of staff felt Mitchell should de-amalgamate. This led to a crisis at the University at the May 1993 Board of Governors meeting voted on a motion of no confidence in Vice-Chancellor Professor Cliff Blake. The motion's proposer, elected staff representative Mr Gordon Crisp, asked that his vote in favour of it - the only one - be recorded. Meeting in Albury, the Board also agreed to disassociate itself from "unfounded and damaging assertions" made by Crisp against Blake and other CSU Board members. Chancellor Mr David Asimus promised improved communication between management and staff. Asimus called the Union survey "ill-conceived and poorly conducted" but said CSU management accepted the results highlighted "communication problems" at the Bathurst campus resulting from the "enormous changes" since CSU was formed. He said Professor Blake had begun to play a more visible role on campus "talking directly with staff and ensuring that there is a two-way flow of information. When the University was formed we were anxious to ensure that the Vice-Chancellor did not become too involved at the campus level".

Charles Sturt's senior management cleverly deflected the criticisms of Professor Blake by pointing to the undisputable benefits the network structure and UNS membership had brought to the members. They understood that the members needed the network structure and could not survive independently. This was supported by the union acceptance that despite staff discontent with the network model, de-amalgamation was not a feasible option. The union wanted to continue with the network structure but wanted the University to change its interpretation of the structure from the centralised model to provide more member autonomy. However, Professor Blake defended his model by suggesting it was not centralised. This again was a clever defence because this research has shown that the federated network structure was not easily understood. Professor Blake was one of the few who understood it extremely well and he deflected criticisms of his interpretation of the structure by arguing that Charles Sturt's network model was, in fact, the decentralised model his critics wanted.

These comments reflect criticism of the Vice-Chancellor's management style. However, Charles Sturt's centralised network model required strong central leadership and, in this sense, Professor Blake was implementing the network model correctly. It is difficult to determine whether the criticism of Charles
Sturt's network structure were due to concerns with the Vice-Chancellor's management style or the centralised model. Certainly there were elements of both in union criticisms. However, much of the staff discontent was directed at the Vice-Chancellor rather than the network model.

The University of New England's operating conflict between the members was caused because UNE, Armidale and UNE, Northern Rivers could not agree on their role and the role of the other members within the network structure. UNE, Armidale felt it should have the senior role within the network while UNE, Northern Rivers felt it should have equal status and power.

The following extract from a letter to Professor Smith by the UNE Teachers Association in July 1990 captured the concerns of UNE, Armidale staff about the network:

"How is it that Armidale, which has by far the largest number of undergraduate students, a highly regarded distance education centre, most of the postgraduate students and virtually all of the significant research activity in the university, finds itself in a position of perceived inequity and potential decline within the institution of which it should form the core?"

This illustrates how UNE, Armidale staff felt that it should have assumed a senior role within the federated network structure due to its size and academic profile compared with the other network members. The letter suggests that the amalgamation was created due to "political reasons" and that there were no academic benefits from the merger. It provided an important insight into negotiations prior to the amalgamation when it claimed that many staff at Armidale were surprised by the legislation which "conferred upon the institution a federal structure at variance with the unitary model that had been the basis of the amalgamation negotiations". This suggests that UNE, Armidale had envisaged a unitary or centralised network model with it assuming a central role within the network structure.

The letter also provides evidence of how UNE, Armidale assumed it would have more control and power within the network structure, particularly in terms of academic governance. It felt that the amalgamation would allow UNE, Armidale to "be better able to play the leading role which its size and seniority might reasonably be expected to command in the amalgamated UNE". However, the letter expressed disappointment that "this expectation has not been realised, for the principals of the Armidale and Northern Rivers campuses now sit as nominal equals at the boardroom table and, on the Academic Executive Committee, Armidale and Northern Rivers have equal number of elected representatives". This illustrates how UNE, Armidale was frustrated by the equal member status afforded by the University's federated network structure. The strength of these frustration were further illustrated when it was suggested that "the position of Armidale has been further compromised by the addition of Orange Agricultural College to the network and the excision of the Coffs Harbour centre from the parent body. These relatively small parts of the university's operation now command what appears to most Armidale academics to be disproportionate influence in the higher echelons of the university. The imposition of a federal structure was antipathetic to the development of trans-campus collegial activity and governments in the new UNE".
The letter then focuses upon the University’s senior management and suggests that it has failed to resolve its role within the federated network structure. It suggested that proposals to further devolve responsibility to the member level was "presented as a means of redressing the deteriorating situation vis-a-vis the amalgamated UNE which the Vice-Chancellor has reported to the Board of Governors and to the university community at large". However, that "this is a de facto recognition that management and amalgamation have failed". The letter concludes by blaming the University administration for the failed relationships within the network resulting in "power within the institution being concentrated into the hands of a cabal of unresponsive, unaccountable managers [which] is of fundamental concern".

The response by UNE, Northern Rivers to the criticism of its membership of the University of New England was to indicate it no longer wanted to be part of the university. On 24 July 1990 the advisory council of UNE, Northern Rivers campus voted to sever the campus’s ties with its parent campus at Armidale, and to rename Northern Rivers the University of Eastern Australia. The Council rejected what it saw as continuing unfounded criticism in the media of Northern Rivers by Armidale academics. The Advisory Council also resolved that "The University of New England, Armidale, be invited to leave the network university by January 1, 1993 at the latest".

At the same time Professor Smith was campaigning for a continuation of the federated network model, a working party established by academic staff reported that a compelling case exists for severing the links between the university's Armidale and Lismore campuses. The report renewed pressure on the Board of Governors to de-amalgamate the two main campuses of the university.

The UNE, Northern Rivers Academic Board provided a report for the Vice-Chancellor to be included in the consolidated response to the amalgamation issues. It provides an insight into Northern Rivers' perception of the network's deteriorating relationships. It contained two recommendations to the Board of Governors:

1. that a stand alone University of Northern Rivers be established by 1 January 1994 at the latest; and
2. that the Lismore-based component of the network university be re-named as the University of Northern Rivers as soon as possible.

The UNE, Northern Rivers Academic Board suggested that its major rationale for the proposed new university was to enable better and more equitable higher education opportunity for the people of the North Coast of NSW. This implies that Northern Rivers could provide a better service as an independent university which suggests that its performance was being constrained as a network member of the University of New England. It is also suggests a positive response to the university's problems by indicating that a de-amalgamation would result in improved service and performance from Northern Rivers. However, it accepts that the proposal was also "driven by negative experiences of the current federated university, the emergence of irreconcilable academic differences between the
Armidale network member and other components of the university, the additional costs and inefficiency of administration of the federated university and the effects that federation has in diverting resources and educational opportunities from the North Coast Region and its needs.

The UNE, Northern Rivers Academic Board argued that the Board of Governor's rationale for continuing with the network due to the financial implications of de-amalgamation was no longer valid because the Federal Government had since demonstrated a willingness to support the development and growth of small regional universities. The Academic Board also cited the State Government's apparent "promise" that the amalgamated UNE was a temporary arrangement. In November 1988, the then State Minister for Education and Youth Affairs, Mr Metherell, indicated that the Government had decided to retain the name University of New England for the new institution so as to take account of growth at the Lismore and Coffs Harbour campuses which would then enable "a case for an independent university with a distinctive title within that region to emerge". Northern Rivers obviously grasped this statement as a political undertaking by the State Government to grant the network member independence at some stage. The Academic Board certainly believed that this undertaking from Minister Metherell provided Northern Rivers with the "political context" for an "orderly and planned progression of a new university" and that this would be "politically acceptable and would not carry with it any threats of withdrawal or diminution funding". These statements indicate that Northern Rivers felt comfortable in seeking de-amalgamation and, indeed, seemed to feel justified that the member was fulfilling its obligations to Government. The strength of this feeling, based upon a comment from a former Minister which cannot be supported as Government policy, suggests that it could have undermined Northern Rivers commitment to the network university and ultimately strengthened its commitment to de-amalgamation.

The feeling within the University was that the conflicts had reached the point where the groups may be better served under a different structure. Professor Smith explained there were several sources of tension at the University:

a) There were deep-seated organisational culture differences between network members.
b) The academics governance process and structures developed in 1990 had proved less than satisfactory.
c) The legislative framework for the network university was defective.

Professor Smith reiterated his fear of the Federal Government's response if the University de-amalgamated. He said Minister Baldwin had told him if the institutions separated there would be a complete reconsideration of the government's resource commitment.

On 1 May 1992 the University of New England declared that it would de-amalgamate. The relationship between the four member institutions was at an end. It was the first serious blow to the Dawkins reforms. The Board of Governors, which last August declined to permit the amalgamation to break up, bowed to the inevitable and agreed to dismantle the university. Speaking after the Board meeting,
Professor Bob Smith said the Board was determined that staff and students would not be disadvantaged, and that the status of any one part of the university would not be diminished.

On 14 May 1992, the State Government announced that Professor Michael Birt would head an advisory council to look at the implications of the request from the UNE that it be split up following months of acrimony between Armidale and Lismore. State Minister for Education, Virginia Chadwick said "Long-term planning for the provision of quality higher education in this region is not going to be well served by hurried decisions on new institutional structures". The taskforce would advise government on how to proceed in the first major unravelling of a university amalgamation.

Despite the University's wish to de-amalgamate, its future remained uncertain. The University was forced to wait on official approval of the split because Mrs Chadwick expressed disappointment over the failed amalgamation and refused to approve the split.

In September 1992, the University reflected on the factors which had caused the disastrous relationships within its federated network structure. Differences in geography were considered only part of the cultural chasm separating Armidale and Northern Rivers UNE. The reasons were cultural, a lack of trust between UNE, Armidale and UNE, Northern Rivers, and a lack of commitment to the network structure.

UNE, Armidale's CEO, Professor Cliff Hawkins said when he arrived from the University of Queensland in 1991, he found a campus "traumatised" by the changes wrought upon it. "Since then, my role has been a healing role. It is my reading of the correspondence that the amalgamation was never meant to last". Instead of seriously expecting the amalgamation to work, State and Federal Minister used the Northern Rivers association with Armidale as the vehicle for providing higher education on the North Coast of NSW, until the campus was able to make its own way. Deputy Principal at Northern Rivers, Professor Gordon Macleod said "There were very clear messages pre-amalgamation that it was to be a temporary phenomenon".

On 31 October 1992, the Report of the Ministerial Taskforce established by Minister Chadwick recommended the de-amalgamation of the University of New England. The University was then certain to be dismantled because of irreconcilable differences between the two major members. The Taskforce recommended that UNE, Northern Rivers be established as an independent university, with a secondary campus at Coffs Harbour, and that UNE, Armidale be established under its former identity as the UNE. The advisory group found vehement opposition to maintenance of the network during extensive talks with the four campus communities. Its report also found that the divisions between the two campuses were exacerbated by serious shortcomings in the State Act which created the university in 1989. It found that Armidale had expected to secure senior status in financial planning and development. But Northern Rivers had expected to have equal status, leading to confusion. It found that the act creating the network allowed for appointment of principals at Armidale and Northern Rivers with CEO status, on an equal footing with the network's Vice-Chancellor making it almost
impossible for him to exercise leadership.

On 13 January 1993 it was announced that Australia would have its 38th university next January at Lismore in Northern NSW. A spokesman for Minister Chadwick said the announcement was made to ease uncertainty for staff, students and the local communities. He said funding for the new university was yet to be addressed. The fate of Orange Agricultural College is being fiercely debated. The relationship between UNE's Coffs Harbour Centre and Lismore is also unresolved.

The aftermath of the New England split was fought out in behind the scenes lobbying for the two new Vice-Chancellor's jobs to become vacant in the UNE break up, with both the Armidale and Northern Rivers advisory councils supporting their present CEOs. Professor Cliff Hawkins (Armidale) and Professor Rod Treyvaud (Northern Rivers) declared themselves applicants for the positions, and their advisory councils tried to pressure the NSW government to install them as the new Vice-Chancellors rather than hold open selection processes. However, neither Professor Hawkins nor Professor Treyvaud were appointed to the position of Vice-Chancellor.

In conclusion, the level of operating conflict between network members varied at each of the network universities. It was highest at the University of New England where the network members could not agree on the task expectation and role of the Office of the Vice-Chancellor or the members. The University's problems were caused by different perceptions at UNE, Armidale and UNE, Northern Rivers over their role and the role of the other members within the network structure. This operating conflict was the forum for much of the interorganisational conflict which occurred within the network's political economy as Armidale and Northern Rivers used political processes to seek power and control within the network. It was lower at the University of Western Sydney where the members understood that the network member autonomy model allowed them substantial day to day autonomy and required them to respect other members' autonomy. However, the University was still faced with the problem of how to resolve the role of the members in University-wide activities. It was lowest at Charles Sturt University where the centralised network model removed confusion or uncertainty about task performance and roles within the network because it resembled the traditional university structure and was clearly understood by most university staff. However, the University still had to resolve the role of members within a centralised network model. It did this by removing the task expectation of members and integrating them as organisational components of the University as a whole.

6.3.2.5 Conclusions

The analysis provides support for proposition 8. It is clear that there was interorganisational conflict between the network members at each of the network universities, however, less so at Charles Sturt University where the main conflict was between staff unions and the Office of the Vice-Chancellor.
There was a reasonably high degree of conflict caused by interdependence at the University of Western Sydney and the University of New England. There was a high degree of structural conflict at the University of New England and a moderate degree at the University of Western Sydney. There was a high degree of operating conflict at the University of New England and a moderate degree at both the University of Western Sydney and Charles Sturt University (focussed mainly at the Office of the Vice-Chancellor). Charles Sturt's centralised network model created a low degree of interorganisational conflict between the members because it did not allow for a strong political economy. The University of Western Sydney's network member autonomy model constrained the potential for interorganisational conflict caused by its strong political economy because it satisfied members' desire for autonomy. However, the University has still to resolve the conflict caused by the problem of how to relinquish autonomy in order to achieve synergy from the network model. The University of New England's network member autonomy model created strong interorganisational conflict largely because the members could not agree on the rules that governed their relationship or the task expectation and role performance of the members. Therefore, it is reasonable to conclude that a federated network structure will result in conflict between network members.

The analysis provides partial support for proposition 9. The analysis of the interorganisational conflict at the University of New England in particular, suggests that member perceptions that their interorganisational relationships are costing more than they provide in benefits, has caused problems within the network's relationships. While at the University of Western Sydney and Charles Sturt University, member perceptions that the benefits are outweighing the costs has maintained reasonably positive interorganisational relationships. Therefore, it is reasonable to suggest that cooperative interorganisational relationships within a federated network will occur when exchanges between members result in greater benefits than the costs involved in maintaining the relationship.

The analysis provides partial support for proposition 10. Certainly, a major part of the problems at the University of New England were perceptions by UNE, Armidale in particular, that it had lost power and status by joining the network structure. Similarly, UNE, Northern Rivers fought to maintain its position as an equal member within the network. The University of Western Sydney's members based their network model upon maintaining member power and autonomy. The University's interorganisational conflict was most often caused by members seeking to maintain or regain power or control within the network's political economy. However, the proposition is not supported at Charles Sturt University where the members lost power and autonomy and accepted the integration of their activities under the University's centralised network model. Therefore, it is reasonable to suggest that in federated network structures which result in the loss of power and autonomy for network members, interorganisational conflict will result between the network members.

The analysis provides support for proposition 11. Certainly the network structure does create interorganisational conflict through member interdependence and this is largely caused by members competing for similar resources. It is also clear that members perceive themselves as competing with other members for scarce resources. Therefore, it is reasonable to conclude that competition for
The analysis provides some support for proposition 12. Certainly, the analysis indicates that the network members at the University of Western Sydney and the University of New England focussed their interorganisational activity on the acquisition of resources and power from the network structure. However, the members at Charles Sturt University were integrated as a single institution and did not compete for resources and power as at the two other universities. This was largely because Charles Sturt's centralised network model created a weak political economy while the network member autonomy model at the two other universities created a very strong political economy. Therefore, it is reasonable to suggest that in a federated network structure, network members will be primarily concerned with the acquisition of funds and authority. This proposition gains more support when the network model creates a strong political economy.

In terms of the weakness identified within the literature, there is support for the proposition that there is a need to provide a more comprehensive empirical investigation of the use of political processes by network members in pursuing resources and power within federated network structures. This research finds that such investigations should address the following theoretical framework:

1. Analyse the network's political processes in terms of whether the network under review is a centralised network model, federative network model, or network member autonomy model. There will be important differences in the strength of the political economy in each model.
2. Analyse the network's governance structures along the same three dimensions.
3. Analyse the network's interorganisational conflict along the same three dimensions.
4. Use network member autonomy as the definitive principle in defining the network structure and the political processes of the structure.

This research also supports the proposition that there needs to be further investigation of the relationship between network member autonomy, network governance structures, and interorganisational conflict between network members. It proposes that there is a relationship between autonomy, governance, and conflict in terms of how they combine to define the network model along the three dimensions above.

6.4 Specific Structural Aspects of the Network

6.4.1 Theoretical Overview

The federated network structure is an organisational structure. This research proposes that an analysis of federated network structures should not be restricted to the study of the structure itself. It should
consider the network as a political economy, its historical context, the range of factors involved in determining the network's visible and invisible network configuration, and its performance. However, this research accepts that the analysis should also include the specific structural aspects of the network. This involves questions of what defines the federated network structure in a specifically structural sense, what makes it different from other organisational structures, and what are its advantages and disadvantages from a structural perspective.

This research uses a number of theoretical frameworks in order to analyse the specific structural aspects of the federated network structure. Few theorists have studied the specific structural aspects of the network. This research will use a theoretical framework derived from work by Benson (1975), Aldrich (1977) and Stern (1981) which suggests four structural determinants that measure the state of a network at a given point in time. It will also use the concept of loose coupling developed by Weick (1976). It will then briefly consider more traditional structural analysis using frameworks provided by Robbins and Barnwell (1989) and Mintzberg (1983). The analysis will conclude with an assessment of the centralisation versus decentralisation debate using theoretical frameworks provided by Jennergren (1986) and Lammers (1988).

Work by Benson (1975), Aldrich (1977) and Stern (1981) suggests four structural determinants that measure the state of a network at a given point in time. These determinants will be used as variables for both describing and explaining the functioning of the federated network structure in a specifically structural sense. They are administrative structure, degree of system coupling, multiplexity of ties, and new network resources.

A particularly useful framework from which to analyse networks is to conceive them as loosely joined systems. The adaptive advantages of a loosely joined system in a complex, heterogenous, and changing environment should be obvious. For example a loosely joined system reaps the benefits of size and specialisation of function, and remains flexible enough to cope with a wide range of contingencies. An important feature of the hierarchical, loosely joined system is that although the individual sub-systems have wide latitude to adapt to local environments, their adoption also depends upon constraints placed upon them by other sub-systems to which they are vertically and horizontally linked. The overall system still shows what an observer might call a unity of purpose. There are disadvantages to loosely joined systems, as there is an inevitable increase in communication delays and ineffectiveness across an entire system. Weick (1976) defined loose coupling as the image that coupled events are responsive, but that each event also preserves its own identity and some evidence of its physical or logical separateness.

Robbins and Barnwell (1989) define an organisation as:

"...a consciously coordinated social entity, with a relatively identifiable boundary, that functions on a relatively continuous basis to achieve a common goal or set of goals".
Robbins and Barnwell's definition focuses on the need for formally coordinating the interaction patterns of organisation members. They suggest that organisation structure stipulates how tasks are to be allocated, who reports to whom, and the formal coordinating mechanisms and interaction patterns that will be followed. This refers to the visible configuration or how the organisation is organised so that its staff are managed and able to perform their tasks effectively.

Mintzberg (1983) suggests that in order to design a structure for any organised human activity, there are two fundamental issues to consider: a) the division of labour into various tasks to be performed, and b) the coordination of these tasks to accomplish the activity. Organisational design essentially involves deciding who does what and how they do it. Mintzberg suggests "the structure of an organisation can be defined simply as the sum total of the ways in which its labor is divided into distinct tasks and then its coordination is achieved among these tasks". Mintzberg suggests that the traditional view was that a good structure was one based on rules and a rigid hierarchy of authority with spans of control no greater than six. Recently, the literature has considered the need to combine long-range planning, job enrichment, and matrix structure in designing effective organisations. Mintzberg rejects both views and proposes a framework based upon design parameters and situational factors clustered as configurations. He suggests that elements of structure should be selected to achieve an internal consistency or harmony, as well as basic consistency with the organisation's situation.

Jennergren (1986) undertook a comprehensive review of the literature on decentralisation and found that the literature was very disparate and diverse. He focused on the decentralisation of decision making in formal organisations. He suggests that decentralisation usually refers to the hierarchical levels on which decisions are made. A typical definition is:

"An administrative organisation is centralised to the extent that decisions are made at relatively high levels in the organisation; decentralized to the extent that discretion and authority to make important decisions are delegated by top management to lower levels of executive authority."

Jennergren found that theorists generally define an organisation's structure as having three components: complexity, formalisation, and centralisation. Complexity refers to the extent of differentiation within the organisation. This includes the degree of specialisation or division of labour, the number of levels in the organisation's hierarchy, and the extent to which the organisation's units are dispersed geographically. The degree to which an organisation relies on rules and procedures to direct the behaviour of employees is formalisation. Centralisation considers where the locus of decision-making authority lies. In some organisations, decision making is highly centralised. Problems flow upward and the senior executives choose the appropriate action. In other cases, decision making is decentralised: authority is dispersed downward in the hierarchy. It is important to recognise that, as with complexity and formalisation, an organisation is not either one or the other: it is not either centralised or decentralised.

The most important structural component of the federated network structure is centralisation. The
degree of centralisation will define the federated network structure in terms of three network models:

1. Centralised network model.
2. Federative network model.
3. Network member autonomy model.

A federated network structure is defined, in part, by its degree of decentralisation. The member autonomy model allows for substantial decentralised decision making authority while the unitary model requires a centralised approach. The level of decision making power or autonomy is a fundamental component of the interpretation of the network structure.

In exploring the specific structural aspects of the network structure at each of the network universities using the above theoretical frameworks, the research also aims to test several theoretical propositions within the literature and to examine some weaknesses of the literature.

The propositions are:

Proposition 13: A federated network structure will result in duplication of resources and activities.

Proposition 14: The strength of the relationships within a federated network structure will be greatly increased by multiple ties between network members.

The weakness identified within the literature is the need to further examine the specific structural aspects of the network structure, particularly what makes it different from other organisational structures and its advantages and disadvantages from a structural sense. There is also a need to consider the implications of the centralisation versus decentralisation debate within the context of the three federated network models.

6.4.2 The Traditional University Structure

The Federal Government's aim to create more effective and efficient structures affected all Australian universities and not only the federated network universities. In mid 1993, the Boston Consulting Group was commissioned to undertake a review of the University of Sydney's administrative structure. The aim was to improve the university's management processes leading to a more effective and
The simple fact that the university invested significant funds for such a review implied that it considered its administrative structure to be inefficient and perhaps ineffective.

The University of Sydney’s structure is indicative of the traditional university structure. As Australia’s oldest second largest (in 1993) university, it had developed a large bureaucratic organisational structure typical of large public organisations.

The Boston Consulting Group’s solution to the University of Sydney’s problems was to reduce employee numbers. The Group identified which positions should be made redundant and created a new and leaner administrative structure. They also identified some functions, such as printing or cleaning, which could be "outsourced" or having private contractors do work that is not considered part of the university’s "core business" because these functions can be performed by small businesses much more efficiently.

The University of Sydney’s administrative structure was changed significantly following the release of the Boston Consulting Group’s report. The University’s principal decision making authorities are the Senate (the governing body), the Vice-Chancellor (as Chief Executive Officer), and the Academic Board. Each group or office has responsibilities broadly defined under the University’s by-laws which are set out in the University’s calendar. The network universities’ principal decision making authorities and their broad responsibilities are similar to the University of Sydney’s. However, there is a crucial difference between the two: the network universities have additional decision making authorities within their network members. There are advisory councils, Chief Executive Officers, and Academic Committees which duplicate the University-wide decision making authority at the member level. The degree of authority or control of these member decision making authorities helped to define each network universities’ interpretation of the federated network structure.

The University of Sydney’s academic governance structure is focussed on faculties and colleges, and it is the faculties which control degree programs. Within faculties, there are schools and departments, responsible through their heads for the custodianship of their disciplines. There are many inter-faculty and inter-departmental centres, some for teaching and research, others research only. The network universities’ academic governance structure is similar to the University of Sydney’s in that the faculties manage the University’s academic activities. However, the crucial difference between the two is the degree of centralisation of the academic governance structure. At the University of Sydney and Charles Sturt University, there are common faculties which manage their academic activities centrally across the University. At the University of Western Sydney and the University of New England the academic governance structure is decentralised and there are separate faculties at each network member.

The Boston Consulting Group’s recommendations on the University of Sydney’s organisational structure provide some insights into organisational design for Australian Universities. The following is an extract from the report which will be used to contrast with the network universities.
The recommendations made by the consultants were informed by principles which they believed should form the philosophical basis of the University administrative structures and processes. These included:

- flatter management structures;
- separation of central policy and service functions;
- better alignment of authority and accountability, including by devolution;
- streamlining of complex administrative processes;
- focus on the main purpose of organisation (ie. outsourcing non-core activity);
- good customer service provision;
- improved top management decision making processes, with an emphasis on strategic thinking and policy development.

In summary, the Offices of the Registrar and Bursar were replaced by four Divisions:

1. Administrative Policy and Strategic Planning
2. Administrative Support Services
3. External Relations (originally Development)
4. Financial Services

The University's sixteen Faculties and Colleges (together with related services, centres, units, foundations etc) were organised into four Academic Groups for administrative purposes, each headed by a Dean from within the Groups of:

a. Agriculture, Science, and Veterinary Science
b. Architecture, Economics, Engineering, Graduate School of Business, and Law
c. Dentistry, Health Sciences, Medicine, and Nursing
d. Arts, College of the Arts, Conservatorium of Music and Education.

The objective was to gain a clearer managerial focus, including a single, streamlined management advisory committee, comprising senior academic and administrative officers, performance management practices and better management information. New accounting and budgeting processes were introduced and formal information technology strategies were to be developed. The management of buildings was to be radically altered, based on owner and tenant roles and recognising the need for long term strategic management of the site and buildings.

It was expected that these changes would lead to the saving of up to $5 million from the central administration budget.

These comments illustrate how a management consultancy reviews an Australian university's
organisational structure. The BCG’s review of the University of Sydney identified the need for more streamlined, centralised governance structures and a rationalisation of resources. It provides for a more cost-effective organisational structure but whether it will improve the University’s efficiency and effectiveness will not be apparent for some time. Charles Sturt University has embarked on a similar interpretation of making the traditional university structure cost-effective. Charles Sturt’s centralised governance structures and rationalisation of its academic profile resemble a traditional management approach to gaining economies of scale. However, Charles Sturt University and the University of Sydney are able to adopt an economic approach to organisational design because they have adopted the traditional centralised university structure. The University of Western Sydney and the University of New England were not able to adopt this approach because their interpretation of the federated network structure allowed for member autonomy. The notion of member autonomy is peculiar to federated network structures and the strong political economy it creates makes the economic approach to organisational design inapplicable. Certainly, federated network structures require good management and they should strive to obtain synergy through economies of scale, cooperation, collaboration and other potential advantages of the structure, but the crucial notion of member autonomy makes centralised governance structures, rationalisation of resources and the streamlining of decision making processes very difficult. An application of the BCG recommendations to the network universities would make them something other than federated network structures or, at the very best, a strongly centralised network model.

6.4.3 The Federated Network Structure

6.4.3.1 Synergy

The federated network structure comprises a central coordinating agency and two or more network members. In terms of the specific structural aspects of the network structure, perhaps the best definition is that the combined efforts of the members should exceed the sum of their individual efforts.

The basis of the exchange perspective of Interorganisational relations lies in the assumption that organisations develop relations with other organisations because this will allow them to control environmental uncertainty or to obtain benefits or rewards which will help them to achieve their goals. Almost all organisations must interact with other organisations to some degree because they cannot obtain all the resources necessary to achieve their goals. The underlying assumption beneath the exchange perspective suggests that organisations form relations with others because it will allow them to achieve their goals better than if they remained entirely independent. It follows that each of the network universities’ member institutions joined their network structure in the hope that their combined efforts would exceed what they could each achieve independently. If the members do not
achieve more as part of their university's federated network structure then it is reasonable to assume they would prefer to remain independent.

The concept of synergy drawn from the field of Finance supports this argument. Synergy is based on efficiency theories which are used to analyse and assess the viability of mergers and takeovers. The underlying assumption is that the merging of two firms will result in more efficiency and a more profitable organisation than if the two organisations remained independent. It may be described in equation form as:

\[ P_{va} + P_{vb} \text{ is less than } P_{vab}. \]

In other words, the present value of firm a plus the present value of firm b should be less than the present value when they become one firm: ab. The application of this theory rests with the notion of economies of scale. The theory suggests that a merger of two or more firms is likely to reap benefits in economies of scale in all functional areas including administration, production, distribution, finance and so on.

The following hypothetical equation is used in order to illustrate the point:

Assumption 1: In October, 1987, the Hawkesbury Agricultural College, the Macarthur Institute of Higher Education and the Nepean College of Advanced Education were each operating to their full potential; ie achieving at a capacity of 100% or 1.0.

Assumption 2: In December, 1988 the three institutions were still independent and had not yet become part of the University of Western Sydney. In agreeing to join the University of Western Sydney they envisaged that their relationship with the other two Members and university status would allow them to achieve more than when they were colleges of advanced education; ie. to achieve at 110% of former capacity or 1.1.

Assumption 3: The University as a whole expected the combined efforts of the Members to exceed the efforts of the Members when they were colleges of advanced education; to achieve at 3 X 110% or 3.3. Thus, to provide enhanced efficiency and effectiveness so that one plus one plus one is more than three.

Assumption 4: At the end of 1993, the three institutions might be achieving more than when they were colleges of advanced education but are not operating at their full potential; they are achieving at a capacity of 90% or 0.9. Thus, the current combined efforts of the Members is 3 X 0.9 or 2.7.

A similar exercise could be taken for the University of New England. It suggests that neither university
had achieved synergy from the federated network structure and that the University was not meeting the objectives of its members. Charles Sturt University has achieved a degree of synergy with its centralised network model.

However, these assumptions are based upon a qualitative assessment of the network universities' performance. A more accurate and quantitative assessment will be provided in the next chapter.

6.4.3.2 Duplicated Structures

Each of the network universities grasped that the first step in gaining synergy within a federated network structure was to address the issue of having duplicated administrative structures at each of the network members.

The amalgamation of two or more organisations immediately creates duplicated administrative structures because each organisation will have overlapping systems. Each organisation will have a Finance Division, Human Resources Division, Planning Division and so on. The network universities had the added duplication of having similar academic structures as well as similar administrative structures. Duplicated structures are costly because similar functions are performed on more than one location within the organisation. This requires staff salaries and other costs for functions which might be centralised in one location and performed on behalf of the network as a whole. The centralisation of a function reduces costs because it is generally more efficient to perform a function on one location than on several, particularly in terms of requiring less staff and less equipment and materials.

Each of the network universities accepted that duplicated administrative structures were wasteful and an inefficient use of resources. At the University of Western Sydney, the Vice-Chancellor, in his Review Paper, placed the blame for the University's lack of synergy on duplicated administrative functions. The Vice-Chancellor felt that "the area in which savings are to be looked for in an amalgamation are in administration." The network had resulted in no reduced staffing at each member and had brought additional staff at the Office of the Vice-Chancellor. Charles Sturt University considered the removal of duplicated structures to be the essence of its centralised network model and the one area where it could derive savings from the federated network structure. The University of New England was frustrated in its attempts to centralise some functions by the University's political economy and the members' reluctance to relinquish a degree of autonomy.

The federated network structure presents peculiar problems in terms of duplicated structures. While it might appear sensible or even necessary to centralise some functions in order to save costs and therefore gain synergy from the network, the network's political economy makes centralisation difficult. The strength of the political economy is determined by the force with which members pursued funds
and authority within the network structure. In a strong political economy, such as at the University of Western Sydney and the University of New England, the members fought hard to maintain their autonomy and were reluctant to give up a degree of this autonomy by allowing some functions to be centralised. In a weak political economy, such as at Charles Sturt University, the members do not have the power or control within the network structure to fight to retain their functions. Strong political economies make it difficult to centralise functions and remove duplicated structures while weak political economies make it far easier.

However, even in strong political economies, senior management may concede that it is simply too wasteful not to centralise some functions and remove some duplicated structures. Even a strong network member autonomy model can allocate some central functions whilst still retaining strong member autonomy. The question is whether to centralise functions and, if so, which functions. For the centralised network model, clearly all administrative and academic functions can be centralised and functions carried out centrally in one location for the network as a whole. For the federative model, the majority of administrative functions can be carried out centrally while academic functions would continue to be decentralised and carried out at the member level. For the network member autonomy model, some administrative functions can be carried out centrally while academic functions would continue to be decentralised and carried out at the member level.

Generally speaking, the centralised administrative structures should occur in those areas which affect the network as a whole and there is the potential for significant cost savings or other synergy benefits. There are some functions which should be carried out centrally or with central leadership and member support. These include:

- Network strategic planning
- Network secretarial services
- Network administrative information systems
- Network corporate promotion
- Network-wide industrial relations

There are also functions in which the central function can be carried out by staff of one member on behalf of the network as a whole. These include:

- Network Equal Employment Opportunity
- Network Freedom of Information
- Network consolidated accounting

In addition, there are areas for which common structures should be considered. These include:

- Administrative information systems
- Finance and accounting
Payroll and personnel administration

Each of these areas present the potential for cost savings or synergy at each of the network universities. There are other areas such as purchasing, printing, security and so on where the university could gain cost savings by having the function performed centrally.

The following analysis summarises the key aspects of each of the federated network universities in terms of duplicated structures:

The University of Western Sydney

- The University has not provided enhanced efficiency and effectiveness so that the sum of the efforts of the three members exceeds the sum of individual member efforts.
- The University has duplicated administrative systems.
- The administrative structures should not simply stay the same as they were when the members were independent institutions.
- The University should have common administrative systems.
- The University should not have central administrative systems.
- The University should not have common academic structures.

In summary, the University's network member autonomy model suggests that it should have some common administrative systems and it should have separate academic structures at each member.

Charles Sturt University

- The University has provided enhanced efficiency and effectiveness so that the sum of the efforts of the two members exceeds the sum of individual member efforts.
- The University does not have duplicated administrative systems.
- The administrative structures have not simply stayed the same as they were when the members were independent institutions.
- The University has common administrative systems.
- The University has central administrative systems.
- The University has common academic structures.

In summary, the University's centralised network model suggests that it should have common and central administrative systems and it should have central academic structures.
The University of New England

- The University has not provided enhanced efficiency and effectiveness so that the sum of the efforts of the three members exceeds the sum of individual member efforts.
- The University has duplicated administrative systems.
- The administrative structures should not simply stay the same as they were when the members were independent institutions.
- The University should have common administrative systems.
- The University should have some central administrative systems.
- The University should not have common academic structures.

In summary, the University's federative network model suggests that it should have some common and some central administrative systems and it should have separate academic structures at each member. However, the University's transition to a network member autonomy model suggests the same configuration as for the University of Western Sydney.

6.4.3.3 Specific Structural Determinants

Work by Benson (1975), Aldrich (1977), and Stern (1981) suggest there are four structural determinants that measure the state of a network at a given point in time. These determinants are used by this research for both describing and explaining the functioning of the network structure at each of the network universities.

6.4.3.3.1 Administrative Structure

Formal rules of interaction provide a basis for dominance by administrative units and other units that control the mechanisms for changing rules. In addition, the creation of hierarchical authority, administrative positions and specialisation of functions provide a basis for dominance within a network.

In a federated network structure, the Office of the Vice-Chancellor or a network member can establish dominance and leadership within the network if it can lead the development of the network's visible and invisible network configuration. While the administrative structure itself is a major factor in establishing who has control or power within the network's political economy, the role played in designing the network's governance structure is equally important. This role continues as the network develops and each member and the Office of the Vice-Chancellor try to impose their interpretation of
the network structure on the others. The most powerful member will succeed in achieving a network configuration which maximises its position within the network. This power will be used in determining rules for the pursuit of funds within the political economy. The ability to make and administer rules regarding the possession, allocation, or use of resources will be a critical source of control within a federated network structure.

At the University of Western Sydney, the development of the network configuration and the ongoing development of the configuration in terms of resource allocation and other political economy issues is shared between the members and the Office of the Vice-Chancellor. The Vice-Chancellor has tried to play a leadership role in this area by writing a number of significant papers on the network configuration. However, the member Chief Executive Officers have had input into this process. The University's Corporate Management Team (CMT) makes the key decisions on behalf of the University as a whole. The CMT also has most control over the University's resources. However, the CEOs make the key decisions on behalf of their network member. The control of resources and the allocation of resources is the critical source of control within the University of Western Sydney's federated network structure. Four people have this control: the Vice-Chancellor and the three Deputy Vice-Chancellors/Chief Executive Officers.

At Charles Sturt University, the development of the network configuration and the ongoing development of the configuration in terms of resource allocation and other political economy issues is determined by the Office of the Vice-Chancellor, and more specifically, the Vice-Chancellor. The Vice-Chancellor has led the University in this area by developing the centralised network model and applying it to Charles Sturt. The Vice-Chancellor makes the key decisions on behalf of the University as a whole. While the Vice-Chancellor has an advisory committee comprising the University's senior staff, he also has most control over the University's resources and, through his Deans and Administrative Heads, he makes the key decisions on behalf of the network members. The control of resources and the allocation of resources is the critical source of control within Charles Sturt University. One person has this control: the Vice-Chancellor.

At the University of New England, the development of the network configuration and the ongoing development of the configuration in terms of resource allocation and other political economy issues was shared between the members and the Office of the Vice-Chancellor. However, the sharing of this role was not at the same level as at the University of Western Sydney due to the deteriorated relations between the members. The Vice-Chancellor tried to play a leadership role in this area by writing a number of significant papers on the network configuration. The University's Vice-Chancellor made the key decisions on behalf of the University as a whole. However, this role became frustrated and ineffective as the interorganisational conflict within the network caused an increasing withdrawal of commitment to the network by the members. The Vice-Chancellor and the Deputy Vice-Chancellors/Chief Executive Officers had shared control over the University's resources. However, the CEOs made the key decisions on behalf of their network member. The control of resources and the allocation of resources was the critical source of control within the University of New England's
federated network structure. Three people had this control: the Vice-Chancellor and the two Deputy Vice-Chancellors/Chief Executive Officers. However, this control was dysfunctional in that the battle for funds and authority within the network's political economy disrupted the University's performance.

6.4.3.3.2 Degree of System Coupling

The organisation of linkages within a network may be described as tightly or loosely coupled. Coupling is important to network development because it influences the activity of specific units to adapt to local problems. When loosely coupled, the network gives members a chance to respond to local conditions without threatening system stability.

The degree of loose coupling reflects the network's degree of member autonomy and its degree of centralisation. A loosely coupled network allows a high degree of member autonomy and control over day to day operations. Under these conditions, members can respond quickly to local matters without referring to the central coordinating agency or a central authority at one of the members for approval or guidance. The network member autonomy model is loosely coupled and provides members with the capacity to manage at the local level. The University of Western Sydney and the University of New England had loosely coupled networks. A slightly tighter coupling provides a balance between member autonomy and central control. It provides some scope for quick response to local problems while ensuring central control over significant or strategic issues. The federative network model is slightly more tightly coupled and provides a balance of member response to management issues with central control. The University of New England began with this type of coupling between the Office of the Vice-Chancellor and the members. A tightly coupled network ensures strong central control over management of the network. Local problems require approval or guidance from the Office of the Vice-Chancellor or a central authority within one of the members. Charles Sturt University has a tightly coupled network.

The literature suggests that a loosely coupled network gives members the opportunity to respond to local conditions without threatening system stability. It is reasonable to conclude that the loosely coupled relationships of the network member autonomy model allow members to respond more quickly to local problems without threatening the network's balance of power.

6.4.3.3 Multiplexity of Ties

Linkages are characterised by the number of ties and amount of material which connect any two units. Aldrich argues that single-purpose ties are much weaker than those which serve multiple purposes. The maintenance of a tie between two network members is more likely when relationships exist between multiple organisational units within each member.
The degree of multiplexity of ties reflects the strength of interaction and commitment of members to the interorganisational relationships within the network structure. Multiple ties between multiple organisational units at each member indicates a strong interorganisational relationship between the members and a strong commitment to maintaining the relationship. Fewer ties indicate a weaker relationship and a weaker commitment to the relationship.

The degree of multiplexity of ties within a federated network structure is also distinguished by whether the ties exist between the central coordinating agency and the members or between the members themselves. The network member autonomy model is more likely to have moderately multiple ties between the members and the central coordinating agency and fewer ties between the members themselves. The main link in the network member autonomy model's interorganisational relationships is between the central coordinating agency and the members and even this is not strong. The University of Western Sydney and the University of New England had this degree of multiplexity of ties. The federative model is more likely to have multiple ties between the central coordinating agency and between the members themselves. However, the ties will not be particularly strong with either. The University of New England began with this degree of multiplexity of ties. The centralised model will have multiple ties between the central coordinating agency and very few ties between the members themselves. The nature of the ties is also different with the centralised model. The tie is more likely to be characterised by direction and control from the centre. The members will have few ties with the other members except within the context of the need for central control. Those functions which operate centrally, but are located in one member, will have strong multiplicity of ties with the other members. The important distinction is that the members do not establish ties as separate organisational entities. Central functions located within members have multiple ties but the members themselves are largely restricted to having ties with the centre. Charles Sturt University had this degree of multiplexity of ties.

The literature suggests that multiple ties promote stability in network relationships and the strength of the relationships will be greatly increased by multiple ties. The strongest interorganisational relationships amongst the network universities is at Charles Sturt University while the weakest was at the University of New England. UNE's network members refused to develop multiple ties and showed little commitment to maintain the relationships within the network. Therefore, it is reasonable to conclude that multiple ties will improve the strength of a network's interorganisational relationships.

6.4.3.3.4 New Network Resources

The power of network units may come either from internal network structure or from access to valued resources external to the network. If resources within the network are limited, units with the ability to capture new resources should gain increased dominance. Under these conditions, network members and the network as a whole should explore alternative resource acquisition to decrease dependence
The degree of influence and power a network member can gain from capturing new resources for the network is determined by the network's degree of resource scarcity. If the network operates under conditions of extreme resource scarcity, the ability to capture new network resources provides a position of power and control within the network.

Each of the network universities operated under conditions of resource scarcity. However, the central coordinating agency (the Office of the Vice-Chancellor) played the major role in capturing and negotiating for the network's resources. This provided the Office with its strongest position within the network because it was the network's point of contact with its main supplier of funds - the Commonwealth Government. However, this also placed the Office of the Vice-Chancellor in a vulnerable position because its performance was measured in terms of the level of funds it captured for the network. The network members' capacity to attract new funds was limited to seeking non-government funds. Non-government funds did not constitute a significant proportion of any of the network universities' funds and therefore it did not provide members with the opportunity to increase their power within the network.

The University of Western Sydney's continued funding growth ensured that the Office of the Vice-Chancellor was seen as performing well in capturing resources for the network. However, much of this was the result of the Government's desire to increase higher education opportunities in Sydney's West. The members had varying success in attracting non-government funds but not to the degree that it contributed to their position of control within the network. Charles Sturt University did not have the same funding growth experienced at the University of Western Sydney. However, it did not have the same demographic growth of Sydney's West. The fact that Charles Sturt had attracted some growth, particularly capital funds, in regions of low population growth meant that the Office of the Vice-Chancellor was perceived as performing well in capturing resources for the network. The members did not capture non-government funds to the degree that it contributed to their position of control within the network. The University of New England did have funding growth. However, the Office of the Vice-Chancellor's performance in attracting resources for the network was marred by criticisms of the equity of resource allocation to members. Both UNE, Armidale and UNE, Northern Rivers felt strongly that their resource needs were being penalised by resources allocated to the other member.

6.4.4 Centralisation Versus Decentralisation

This research has found that further research is required into whether the federated network structure is a centralised or decentralised organisational structure. This should examine whether the network is more effective and efficient as a centralised or decentralised structure. It should do this by analysing the three network models: the centralised network model, the federative network model, and the
network member autonomy model within the context of the centralisation versus decentralisation debate.

6.4.5 Conclusions

The analysis provides some support for proposition 13. It is clear that each of the three federated network universities began with an organisational structure which duplicated resources and activities. Charles Sturt University adopted a centralised network model which aimed to remove the network's duplication. It may be argued that the centralised model was successful in reducing the network's duplication. However, the federative and network member autonomy models adopted at the University of New England and the University of Western Sydney facilitated duplication. Therefore, it is reasonable to conclude that a federated network structure will result in duplication of resources and activities. This is truer of federative and network member autonomy models.

The analysis provides some support for proposition 14. The strongest interorganisational relationships between members amongst the network universities is at Charles Sturt University while the weakest was at the University of New England. UNE's network members refused to develop multiple ties and showed little commitment to maintain the relationships within the network. While CSU's members developed multiple ties, largely through the central coordinating agency (the Office of the Vice-Chancellor), as part of its centralised network model. Therefore, it is reasonable to conclude that the strength of the relationships within a federated network structure will be increased by multiple ties between network members.

In terms of the weakness identified within the literature, there is support for the proposition that there is a need to further examine the specific structural aspects of the network structure, particularly what makes it different from other organisational structures and its advantages and disadvantages from a structural sense. There is also a need to consider the implications of the centralisation versus decentralisation debate within the context of the three federated network models.
CHAPTER SEVEN: PERFORMANCE OF THE NETWORK

7.1 Introduction

This chapter concludes the analysis of Australia's three network universities by reviewing the performance of the network structure in the period 1988 to 1993. In doing so, it completes the circle begun in chapter four which outlined both the Federal Government's and the institutions' economic and educational objectives for the network structure. The Federal Government's economic objectives were based on the belief that increased performance from Australia's higher education system would help improve the nation's economic performance while its educational objectives were based on the perceived need to improve the higher education institution's efficiency and effectiveness. The performance of the network universities is reviewed in terms of these educational and economic objectives. The analysis which follows uses the objectives stated in the White Paper as a framework for reviewing the network universities' performance. It compares performance against objectives by examining data along several dimensions derived from performance indicators outlined in the Federal Government Department of Employment, Education and Training (DEET) publication "Australian Higher Education: A Report".

Dawkins felt that universities could:

a) improve their effectiveness by focussing their activities on their particular strengths, particularly in terms of Australia's need for "economically relevant" higher education; and

b) improve their efficiency through improved institutional management, particularly in terms of economies of scale.

The chapter concludes with an analysis of the performance of the network universities from the perspective of the institutions themselves. It asks whether they would be satisfied with their performance after their first five years of operation and, in doing so, assesses the performance of the federated network structure from an Interorganisational Relations perspective.

The analysis which follows will refer to the network universities in 1988 and 1989 by aggregating the member institutions' data.

The analysis uses EFTSU data only. Weighted EFTSU could not be provided by the Department of Employment, Education and Training.
7.2 Theoretical Overview

Interorganisational effectiveness within a federated network structure is drawn from the other dimensions section of the literature review. The effectiveness of interorganisational relationships has not been the subject of much attention within the literature and it is generally agreed by theorists that the effectiveness of interorganisational relationships are difficult to measure.

Yuchtman and Seashore (1967) suggest that most approaches to organisational effectiveness have traditionally defined it in terms of goal attainment. More specifically; most investigators tend implicitly or explicitly to make the following two assumptions:

1. that complex organisations have an ultimate goal (mission or function) toward which they are striving, and
2. that the ultimate goal can be identified empirically and progress toward it measured.

The goal approach to organisational effectiveness is characterised by a focus on the formal charter of the organisation. Yuchtman and Seashore criticise the goal approach and instead propose a functional approach where the focus of the assessment of organisational effectiveness is not the organisation itself but rather the superordinate system. This suggests that the organisation's performance is measured by its key stakeholders, which in the case of the network universities would include staff, students, business, community, and government. Yuchtman and Seashore also offer a system resource approach to organisational effectiveness which basically assesses an organisation's effectiveness as its general capability as a resource-getting system.

Hage (1974) presented an axiomatic theory of organisations which defined eight organisational variables. The variables were divided into two sections: organisational means and organisational ends. Three of the variables are critical to an understanding of the effectiveness of interorganisational relationships:

- Centralisation (hierarchy of authority)
- Production (effectiveness)
- Efficiency (cost)

Van De Ven (1976) attempted to quantify interorganisational relationships. He suggests that the end objective of organisations involved in an interorganisational relationship is the attainment of goals that are unachievable by organisations independently. He also looks at the structural aspects of interorganisational relationships and their process dimensions. Van De Ven proposes an important model of interorganisational relationship effectiveness. These include five situational factors; two process dimensions; three structural dimensions and an outcome dimension.
Raelin (1980) attempted to evaluate the performance of networks and suggested that performance evaluation refers to the adequacy of the network as a whole as well as of each component organisation in performing its assigned task functions. Linkage evaluation includes such constructs as the assessment of working relationships and of the reliability, content and timeliness of communications among network participants. Leadership evaluation considers the assessment of the performance of network leadership. Each of these factors can be used to determine how effective the organisation is currently performing.

Dalton, Todor, Spendolini, Fielding and Porter (1980) presented a critical review of organisation structure and performance. They conclude that evaluations and generalisations concerning the nature and directions of the relationships between structure and performance are tenuous. Dalton et al suggest that many people would consider performance to be the single most important organisational dependent variable, whether in the public or private sector. However, the authors' review illustrated not only a lack of consistency but also a paucity of research in essential areas with respect to associations between structure and performance. They suggest that these problems may be due to some hesitancy to examine the "alleged" relationship between structure and performance and assert that it may be that, in practice, there is no such relationship.

Perhaps the best means of assessing the effectiveness of interorganisational relationships is to determine whether the relationship has met the needs and expectations of those involved. Organisations enter into relationships with other organisations in order to attain goals that are unachievable if they remained independent. If an organisation forms a relationship with another it results in immediate loss; in terms of lost autonomy and the need to invest time and energy to develop and maintain the relationship. In order to compensate for its loss, the organisation will expect benefits or rewards from the relationship. Whether in the form of reduced environmental uncertainty or resources, the organisation will expect the relationship to produce more than it costs. If the benefits do not outweigh the costs, the organisation is likely to want to withdraw from the relationship. The argument applies equally to voluntary, mandated and partially mandated relations. Even in mandated relations, if the benefits do not outweigh the costs the organisation is likely to resist the mandate and the relationship is likely to become dysfunctional.

In reviewing the performance of the network universities between 1988 to 1993, the research also aims to test several theoretical propositions within the literature and to examine some weaknesses of the literature.

The propositions are:

Proposition 15: The removal of duplicated resources or activities within a federated network structure will not ensure improved performance of the network.
Proposition 16: A federated network structure will improve network member performance.

The weakness identified within the literature is the need to provide a more comprehensive framework for evaluating the performance of federated network structures, particularly their efficiency and effectiveness. It is also important to develop frameworks for comparing the performance of the three network models: the centralised network model, the federative model, and the network member autonomy model. There is also a need for further research into the association between the political economy and its effects on the effectiveness of interorganisational relationships within each of the three network models.

7.3 Effectiveness of the Network Structure

7.3.1 Introduction

This research reviews the effectiveness of Australia's network universities in the period 1988 to 1993 in terms of the Federal Government's economic objectives for higher education. In chapter four it was shown how the Federal Government wanted to improve the effectiveness of Australia's higher education system because it felt that this would help improve the nation's economic performance. The Government was committed to the economic restructuring of Australian society, which involved the further rationalisation of higher education and the linking of higher education goals more firmly to economic ends. The Green and White Paper proposals were made in the context of rising community expectations for greater access to higher education and for higher education to have more economic relevance.

In his address to a conference on his Green Paper, Mr Dawkins suggested that "it hardly seems necessary to make the point that while a broadly based, well developed system of higher education can contribute to economic growth, its very existence is contingent on the growth and strength of the economy". This comment illustrates how Dawkins viewed universities' performance from an economists perspective. He was concerned that universities were not doing enough to help Australia out of its economic problems and his widespread reforms aimed to redress the situation.

Despite Dawkins' commitment, the proposal of direct linkages between higher education and economic growth had been discredited since the 1970s. Vaizey (1972) analysed the concepts which had been used to explain the reciprocal connections of the economy and the education system. He suggested that the direct economic impact of education can be analysed at several levels:

1 The proportion of the labour force serving as teachers, (researchers), ancillaries,
The proportion of different skilled groups in the labour force.
The use of other current resources.
The proportion of the Gross National Product used for education.
The proportion of the public budget, at different levels, used for education.
The proportion of private consumption which goes into education.

It is possible to analyse Australia's higher education system at each of these levels but this would miss Dawkins' point. He was not concerned with the number of people employed in the system or the amount of funds spent on education, this would be to focus on inputs, he was concerned with the results of the system, the outputs. This research's review of the effectiveness of the network universities will focus on their outputs in terms of performance indicators provided by "Higher Education: A Report".

The contribution of Australia's three network universities to their nation's economic performance during this period will be explored through the performance indicators below. The analysis compares the performance of each of the network universities from 1988 to 1993. In 1988 and 1989, the performance of the network member institutions was combined to produce an aggregated figure for each network university. This is then used to compare the performance of the network universities in terms of whether the combined performance of the members has improved since 1988.

7.3.2 Student Enrolment and Completion

Student enrolment is a way to assess a higher education institution's contribution to the nation because they measure the number of students entering the institution. Student enrolment figures are important because the number of students enrolling at an institution is the most fundamental way to measure the institution's inputs. In addition, growth in student numbers is a measure of an institution's success in attracting student growth. Student growth requires additional resources from Government which implies the Government is sufficiently satisfied with the institution's performance to provide funding growth. Student completions or graduations is the most fundamental way to measure the institution's outputs. Growth in student completions indicates the institution is increasing its main output.

7.3.2.1 Student Numbers

In terms of student numbers (enrolments), the University of New England was the largest of the three
network universities in 1988. In combined terms (ie. aggregating the member institutions), it would
have been the 6th largest institution in Australia in 1988 (of 75 institutions); Charles Sturt University
would have been the 12th largest; while the University of Western Sydney would have been the 17th
largest.

In 1993, the University of New England was still the largest of the network universities in terms of
student numbers. UNE was the 12th largest university of Australia in 1993 (of 35 institutions); the
University of Western Sydney was the 13th largest; while Charles Sturt University was the 18th largest.
In terms of the universities established between 1987 and 1992 (the post-White Paper institutions),
the University of New England was the 5th largest (of 17 institutions); the University of Western
Sydney the 6th largest; and Charles Sturt University the 9th largest.

In terms of growth in student numbers, the University of Western Sydney was the fastest growing
network university in the period between 1988 to 1993. The University of Western Sydney grew from
an aggregated figure of 9,736 students in 1988 to 19,676 in 1993 which represents an increase of
102%. The University of New England grew from 14,535 students in 1988 to 20,321 in 1993 which
represents an increase of 40%. Charles Sturt University grew from 11,595 students in 1988 to 15,240
in 1993 which represents an increase of 31%.

7.3.2.2 Student Load

Student load represents the weighting accorded to students based upon their level of study (ie.
whether they are full-time or part-time students). Student load is calculated in terms of EFTSU
(equivalent full-time student unit) and is also used to determine institutions' funding levels. Student
load is a more accurate indicator of an institutions student profile than student numbers because an
institutions proportion of full-time and part-time students can have serious resource implications.

In terms of student load (EFTSU), the University of New England was again the largest of the three
network universities in 1988. In combined terms (ie. aggregating the member institutions), it would
have been the 8th largest institution in Australia in 1988 (of 75 institutions); the University of Western
Sydney would have been the 14th largest; while Charles Sturt University would have been the 17th
largest;

In 1993, the University of Western Sydney was the largest of the network universities in terms of
student load. UWS was the 11th largest university of Australia in 1993 (of 35 institutions); the
University of New England was the 14th largest; while Charles Sturt University was the 21st largest. In
terms of the universities established between 1987 and 1992 (the post-White Paper institutions), the
University of Western Sydney was the 4th largest (of 17 institutions); the University of New England
the 7th largest; and Charles Sturt University the 9th largest.
In terms of growth in student load, the University of Western Sydney was again the fastest growing network university in the period between 1988 to 1993. The University of Western Sydney grew from an aggregated figure of 8,147 EFTSU in 1988 to 15,890 in 1993 which represents an increase of 95%. The University of New England grew from 9,643 EFTSU in 1988 to 13,283 in 1993 which represents an increase of 38%. Charles Sturt University grew from 7,463 EFTSU in 1988 to 9,909 in 1993 which represents an increase of 33%. Both the University of New England and Charles Sturt University's EFTSU actually declined from 1992 to 1993.

7.3.2.3 Student Commencements

Student commencements represent the number of new students enrolling at the institution. It is a measure of the growth in new students.

In terms of student commencements, the University of New England was the largest of the three network universities in 1988. In combined terms (ie. aggregating the member institutions), it would have had the 7th largest number of commencing students in 1988 (of 75 institutions); Charles Sturt University would have had the 11th largest; while the University of Western Sydney would have had the 12th largest.

In 1993, the University of New England was again the largest of the network universities in terms of student commencements. UNE had the 10th largest number of commencing students in 1993 (of 35 institutions); the University of Western Sydney had the 11th largest; while Charles Sturt University had the 18th largest. In terms of the universities established between 1987 and 1992 (the post-White Paper institutions), the University of New England had the 4th largest number of commencing students (of 17 institutions); the University of Western Sydney had the 5th largest; and Charles Sturt University the 9th largest.

In terms of growth in commencing student numbers, the University of Western Sydney was again the fastest growing network university in the period between 1988 to 1993. The University of Western Sydney grew from an aggregated figure of 4,402 commencing students in 1988 to 8,023 in 1993 which represents an increase of 82%. The University of New England grew from 5,657 commencing students in 1988 to 8,124 in 1993 which represents an increase of 44%. Charles Sturt University grew from 4,710 commencing students in 1988 to 5,828 in 1993 which represents an increase of 24%. Charles Sturt University commencing student numbers had declined from 1990 to 1993 while the University of New England's had declined from 1992 to 1993.
7.3.2.4 Student Completions

Student completions represent the number of students graduating from the institution. It is perhaps the main measure of the institution's output. Student completions are not available by institution for 1987 and 1988.

In terms of student completions, the University of New England was the largest of the three network universities in 1989. In combined terms (ie. aggregating the member institutions), it would have had the 9th largest number of graduating students in 1988 (of 75 institutions); Charles Sturt University would have had the 13th largest; while the University of Western Sydney would have had the 17th largest.

In 1993, the University of New England was again the largest of the network universities in terms of student completions. UNE had the 11th largest number of graduating students in 1993 (of 35 institutions); the University of Western Sydney had the 13th largest; while Charles Sturt University had the 17th largest. In terms of the universities established between 1987 and 1992 (the post-White Paper institutions), the University of New England had the 3rd largest number of graduating students (of 17 institutions); the University of Western Sydney had the 6th largest; and Charles Sturt University the 8th largest.

In terms of growth in graduating students, the University of Western Sydney was again the fastest growing network university in the period between 1990 to 1993. The University of Western Sydney grew from an aggregated figure of 1,980 graduating students in 1990 to 3,530 in 1993 which represents an increase of 78%. Charles Sturt University grew from 2,289 graduating students in 1988 to 3,212 in 1993 which represents an increase of 40%. The University of New England grew from 3,037 graduating students in 1988 to 4,076 in 1993 which represents an increase of 34%.

7.3.3 Type of Student Enrolment

Type of student enrolment is a way to assess a higher education institution's contribution to the nation because it measures the pattern of student study. Type of student enrolment refers to whether students are studying full-time, part-time, or externally. This has implications in terms of student completion times and resources. Students studying full-time will complete their course faster than those studying the same course part-time. A higher proportion of full-time students implies that the institution will produce more graduates in minimum time than institutions with a higher proportion of part-time students. A high ratio of full-time students suggests the institutions' output will be higher in terms of producing graduates. The resource implications of external students will be considered in section 7.4.
7.3.3.1 Full-time Students

The proportion of full-time students remained reasonably stable at each of the network universities during the period 1988 to 1993. The University of Western Sydney had significantly more full-time students than the two other network universities in 1988 and in 1993. During the period under review, UWS's proportion of full-time students decreased slightly from 67% in 1988 to 65% in 1993; the University of New England also decreased slightly from 40% in 1988 to 39% in 1993; however, Charles Sturt University increased slightly from 31% in 1988 to 34% in 1993.

7.3.3.2 Part-time Students

The proportion of part-time students also remained reasonably stable at each of the network universities during the period 1988 to 1993, however, the University of Western Sydney's proportion increased slightly. UWS had significantly more part-time students than the two other network universities in 1988 and in 1993. During the period under review, UWS's proportion of part-time students increased from 27% in 1988 to 32% in 1993; the University of New England increased slightly from 5% in 1988 to 6% in 1993; while Charles Sturt University remained at 7% in 1988 and in 1993.

7.3.3.3 External Students

The proportion of external students decreased slightly at two of the network universities and increased slightly at one during the period 1988 to 1993. External students represented the most common type of enrolment at both the University of New England and Charles Sturt University while they represented a minor type of enrolment at the University of Western Sydney. During the period under review, UNE's proportion of external students increased slightly from 55% in 1988 to 56% in 1993; CSU's decreased slightly from 62% in 1988 to 58% in 1993; while UWS's decreased slightly from 6% in 1988 to 3% in 1993.

7.3.4 Student Enrolment and Completion by Level of Study

Student enrolment by level of study is a further way to assess a higher education institution's contribution to the nation because it measures the number of students in terms of whether they are...
postgraduate or undergraduate. The distinction between postgraduate and undergraduate is important because the proportion of students enrolled in postgraduate courses reflects the quality of the institution’s research profile. A higher ratio of postgraduate students has implications for the effectiveness of the institution in attracting higher degree by research students, academic staff capable of higher degree supervision, and the quality of the institution’s output (graduates). Postgraduate degree enrolments and completions produce more qualified graduates and reflect the institution’s contribution to the nation by providing better qualified graduates.

7.3.4.1 Student Enrolments and Completions in Higher Degree By Research Courses

In terms of student enrolled in higher degree by research courses, the University of New England had by far the most students of the three network universities in 1988. This is not surprising given the former UNE was the only university of the network university member institutions.

In 1993, the University of New England still had the most higher degree by research students of the network universities. However, both the University of Western Sydney and Charles Sturt University had significantly increased their higher degree by research student numbers since 1988.

In terms of growth in higher degree by research student numbers, Charles Sturt University was the fastest growing network university in the period between 1988 to 1993. CSU grew from an aggregated figure of 7 students in 1988 to 162 in 1993 which represents an increase of 2,214%; the University of Western Sydney grew from 28 students in 1988 to 460 in 1993 which represents an increase of 1,542%; while the University of New England grew from 482 students in 1988 to 814 in 1993 which represents an increase of 69%.

In terms of sector comparisons, UNE (4.0%) had the 18th highest proportion of higher degree by research students of Australia universities in 1993 (of 35 institutions); the University of Western Sydney (2.3%) had the 29th highest proportion; while Charles Sturt University (1.1%) had the 33rd highest. In terms of the universities established between 1987 and 1992 (the post-White Paper institutions), the University of New England had the 2nd highest proportion (of 17 institutions); the University of Western Sydney the 12th highest; and Charles Sturt University the 15th highest.

In terms of student completions in higher degree by research courses, the University of New England had the most graduates of the three network universities in 1993 while the University of Western Sydney had the fastest growth between 1991 and 1993. UWS increased its higher degree by research graduates from 11 in 1991 to 34 in 1993 which represents an increase of 209%; UNE increased from 54 to 70 which represents an increase of 30%; while CSU increased from 4 to 5 which represents an increase of 25%.
7.3.4.2 Student Enrolments and Completions in Higher Degree By Coursework

In terms of student enrolled in higher degree by coursework, the University of New England had by far the most students of the three network universities in 1988. This is also not surprising given the former UNE was the only university of the network university member institutions.

In 1993, the University of New England still had the most higher degree by coursework students of the network universities. However, both the University of Western Sydney and Charles Sturt University had dramatically increased their higher degree by coursework student numbers since 1988.

In terms of growth in higher degree by coursework student numbers, the University of Western Sydney was the fastest growing network university in the period between 1988 to 1993. UWS grew from an aggregated figure of 0 students in 1988 to 1,163 in 1993 which represents a dramatic increase; Charles Sturt University grew from 10 students in 1988 to 893 in 1993 which represents an increase of 8,830%; while the University of New England grew from 716 students in 1988 to 1,286 in 1993 which represents an increase of 80%.

In terms of sector comparisons, UNE (6.3%) had the 9th highest proportion of higher degree by coursework students of Australia universities in 1993 (of 35 institutions); UWS (5.9%) had the 12th highest proportion; while CSU (5.8%) had the 13th highest. In terms of the universities established between 1987 and 1992 (the post-White Paper institutions), UNE had the 3rd highest proportion (of 17 institutions); UWS had the 5th highest; and CSU the 6th highest.

In terms of student completions in higher degree by coursework, the University of New England had the most graduates of the three network universities in 1993 while Charles Sturt University had the fastest growth between 1991 and 1993. CSU increased its higher degree by coursework graduates from 7 in 1991 to 130 in 1993 which represents an increase of 1,757%; UWS increased from 27 to 185 which represents an increase of 585%; while UNE increased from 169 to 228 which represents an increase of 35%.

7.3.4.3 Student Enrolments and Completions in Other Postgraduate Courses

In terms of student enrolled in other postgraduate courses, the University of New England had the most students of the three network universities in 1988. This is also not surprising given the former UNE was the only university of the network university member institutions.
In 1993, the University of New England still had the most other postgraduate students of the network universities. UNE actually increased its other postgraduate student numbers significantly in the period 1988 to 1993 while the University of Western Sydney increased by half and Charles Sturt University remained stable.

In terms of growth in other postgraduate student numbers, the University of New England was the fastest growing network university in the period between 1988 to 1993. UNE grew from an aggregated figure of 1,511 students in 1988 to 3,071 in 1993 which represents an increase of 103%; UWS grew from 550 students in 1988 to 824 in 1993 which represents an increase of 50%; while CSU grew from 1,321 students in 1988 to 1,348 in 1993 which represents an increase of 2%.

In terms of student completions in other postgraduate courses, the University of New England had the most graduates of the three network universities in 1993 and the fastest growth between 1991 and 1993. UNE increased its other postgraduate graduates from 589 in 1991 to 1,041 in 1993 which represents an increase of 77%; CSU increased from 516 to 624 which represents an increase of 21%; while UWS increased from 263 to 297 which represents an increase of 13%.

### 7.3.4.4 Student Enrolments and Completions in Bachelor Degrees

In terms of student enrolled in bachelor degrees, the University of New England had the most students of the three network universities in 1988.

In 1993, the University of Western Sydney had the most bachelor degree students of the network universities. UWS increased its bachelor degree students dramatically in the period 1988 to 1993 while both UNE and CSU increased their numbers significantly.

In terms of growth in bachelor degree student numbers, the University of Western Sydney was the fastest growing network university in the period between 1988 to 1993. UWS grew from an aggregated figure of 5,681 students in 1988 to 15,442 in 1993 which represents an increase of 172%; CSU grew from 7,081 students in 1988 to 11,009 in 1993 which represents an increase of 55%; while UNE grew from 8,542 students in 1988 to 13,001 in 1993 which represents an increase of 52%.

In terms of student completions in bachelor degrees, the University of New England had the most graduates of the three network universities in 1993 while the University of Western Sydney had the fastest growth between 1991 and 1993. UWS increased its bachelor degree graduates from 1,234 in 1991 to 2,035 in 1993 which represents an increase of 65%; UNE increased from 1,459 to 2,214 which represents an increase of 52%; while CSU increased from 1,266 to 1,902 which represents an increase of 50%.
7.3.5 Student Completions by Field of Study

Student completions by field of study is a further way to assess a higher education institution's contribution to the nation because it measures the number of outputs (graduates) in terms of their vocational "relevance". A fundamental objective of the Federal Government's White Paper reforms was to increase the number of graduates in "vocationally relevant" fields of study. The vocationally relevant fields of study included business, engineering and science. The Government felt that increasing the number of graduates in these fields would further help achieve its objective of making higher education more vocationally relevant. It was an extension of the objective to have a better educated workforce. Graduates in these fields of study would also provide a better educated workforce in vocations required to improve the nation's economic performance. The institution could demonstrate improved effectiveness by producing increased numbers of graduates in these vocationally relevant fields of study.

7.3.5.1 Student Completions in Agriculture, Architecture and the Arts

In terms of student completions in the Agriculture field of study, the University of New England had the most graduates of the three network universities in 1988 and in 1992. CSU had the strongest growth in student completions in this field of study increasing from 119 graduates in 1988 to 204 in 1992 which represents an increase of 71%; UNE increased from 132 graduates in 1988 to 215 in 1992 which represents an increase of 63%; while UWS increased from 103 graduates in 1988 to 145 in 1992 which represents an increase of 41%.

In terms of student completions in the Architecture field of study, the University of New England had the most graduates of the three network universities in 1988 and in 1992. UNE also had the strongest growth in student completions in this field of study increasing from 20 graduates in 1988 to 46 in 1992 which represents an increase of 130%; UWS increased from 0 graduates in 1988 to 7 in 1992; while CSU remained stable with 14 graduates in 1988 and 14 in 1992.

In terms of student completions in the Arts field of study, the University of New England had the most graduates of the three network universities in 1988 and in 1992. UWS had the strongest growth in student completions in this field of study increasing from 292 graduates in 1988 to 596 in 1992 which represents an increase of 104%; CSU increased from 457 graduates in 1988 to 631 in 1992 which represents an increase of 38%; while UNE increased from 700 graduates in 1988 to 963 in 1992 which also represents an increase of 38%.
7.3.5.2 Student Completions in Business, Education, Engineering, and Health

In terms of student completions in the Business field of study, the University of New England had the most graduates of the three network universities in 1988, however, the University of Western Sydney had the most graduates in 1992. UWS had the strongest growth in student completions in this field of study increasing from 278 graduates in 1988 to 787 in 1992 which represents an increase of 183%; CSU increased from 381 graduates in 1988 to 755 in 1992 which represents an increase of 98%; while UNE increased from 408 graduates in 1988 to 685 in 1992 which represents an increase of 68%.

In terms of student completions in the Education field of study, the University of New England had the most graduates of the three network universities in 1988 and in 1992. UWS had the strongest growth in student completions in this field of study increasing from 427 graduates in 1988 to 819 in 1992 which represents an increase of 92%; UNE increased from 726 graduates in 1988 to 1,066 in 1992 which represents an increase of 47%; while CSU increased from 585 graduates in 1988 to 845 in 1992 which represents an increase of 44%.

In terms of student completions in the Engineering field of study, the three network universities did not produce any graduates in 1988 or 1992. The University of Western Sydney, through Nepean, did produce 44 graduates in 1989, and a single graduate in 1991.

In terms of student completions in the Health field of study, the University of New England had the most graduates of the three network universities in 1988, however, the University of Western Sydney had the most graduates in 1992. UNE had the strongest growth in student completions in this field of study increasing from 136 graduates in 1988 to 626 in 1992 which represents an increase of 360%; UWS increased from 204 graduates in 1988 to 817 in 1992 which represents an increase of 300%; while CSU increased from 205 graduates in 1988 to 519 in 1992 which represents an increase of 153%.

7.3.5.3 Student Completions in Law, Science and Veterinary Science

In terms of student completions in the Law field of study, Charles Sturt University had the most graduates of the three network universities in 1988 and in 1992. UNE had the strongest growth in student completions in this field of study increasing from 0 graduates in 1988 to 7 in 1992; UWS remained stable with 11 graduates in 1988 and 11 in 1992; while CSU decreased from 50 graduates in 1988 to 38 in 1992 which represents a decrease of 24%.
In terms of student completions in the Science field of study, the University of New England had the most graduates of the three network universities in 1988 and in 1992. UWS had the strongest growth in student completions in this field of study increasing from 89 graduates in 1988 to 348 in 1992 which represents an increase of 291%; UNE increased from 247 graduates in 1988 to 468 in 1992 which represents an increase of 89%; while CSU increased from 134 graduates in 1988 to 206 in 1992 which represents an increase of 54%.

In terms of student completions in the Veterinary Science field of study, the three network universities did not produce any graduates between 1988 and 1992.

7.3.6 Graduate Employment Rate

Graduate employment rate is a further way to assess a higher education institution's contribution to the nation because it measures the number of students who gain employment following their degree. This measures the quality of the higher education process in terms of the employability of graduates. Graduates can best contribute to Australia's economic performance if they gain employment and utilise their skills in the workplace. The proportion of graduates who gain employment is an indication of the performance of an institution in producing employable graduates. This objectives is closely associated with the Federal Government's White Paper reforms which aimed to increase the number of graduates in "vocationally relevant" fields of study. The institution's performance in producing employable graduates in these vocationally relevant fields is a further indication of its effectiveness and its contribution to the nation. The performance of the network universities in providing employable graduates in "vocationally relevant" fields of study is a strong measure of the effectiveness of their performance.

It is also important to analyse graduate employment rates in terms of whether graduates have found employment in the government or private sectors and the proportion of graduates undertaking further study. The proportion of the institution's graduates who find employment in the private sector is a measure of the quality of the graduates. The private sector tends to have higher remuneration than the public sector and it tends to employ the best graduates. However, the proportion of graduates who find employment in the public sector is a measure of the institution's contribution to Government because Government is the major public sector employer. The proportion of graduates undertaking further study is another measure of the institution's contribution to the nation because these students are aiming to increase their qualifications. It is reasonable to conclude that these students will become even more employable graduates.
7.3.6.1 Graduate Employment in Agriculture, Architecture and the Arts

In terms of graduate employment rates in the Agriculture field of study, the University of Western Sydney had the best employment rate of the three network universities in 1988, however, all three universities performed similarly. In 1993, Charles Sturt University had the best graduate employment rate. All three network universities' graduate employment rate in this field of study decreased between 1988 and 1993. Charles Sturt University had the smallest decrease falling from 75.0% in 1988 to 52.7% in 1993 which represents a decrease of 27.3%; UNE decreased from 78.9% in 1988 to 47.7% in 1993 which represents a decrease of 31.2%; while UWS decreased from 80.0% in 1988 to 37.0% in 1993 which represents a decrease of 43.0%.

In terms of graduate employment rates in the Architecture field of study, Charles Sturt University had the best employment rate of the three network universities in 1988 and in 1993. However, graduate numbers in this field of study are very small for each of the three universities and it is not a significant field. Charles Sturt University's graduate employment rate in this field of study remained stable at 100.0% in 1988 and in 1993; UWS decreased from 100.0% in 1988 to 66.7% in 1993 which represents a decrease of 33.3%; while UNE decreased from 75.0% in 1988 to 0.0% in 1993 which represents a decrease of 75.0%.

In terms of graduate employment rates in the Arts field of study, Charles Sturt University had the best employment rate of the three network universities in 1988 and in 1993. All three network universities' graduate employment rate in this field of study decreased between 1988 and 1993. The University of New England had the smallest decrease falling from 53.1% in 1988 to 34.4% in 1993 which represents a decrease of 18.7%; CSU decreased from 68.7% in 1988 to 48.5% in 1993 which represents a decrease of 20.2%; while UWS decreased from 44.8% in 1988 to 23.4% in 1993 which represents a decrease of 21.4%.

7.3.6.2 Graduate Employment in Business, Education, Engineering, and Health

In terms of graduate employment rates in the Business field of study, Charles Sturt University had the best employment rate of the three network universities in 1988 and in 1993. All three network universities' graduate employment rate in this field of study decreased between 1988 and 1993. Charles Sturt University had the smallest decrease falling from 89.6% in 1988 to 72.3% in 1993 which represents a decrease of 17.3%; UWS decreased from 87.3% in 1988 to 63.9% in 1993 which represents a decrease of 23.4%; while UNE decreased from 86.9% in 1988 to 54.2% in 1993 which represents a decrease of 32.7%.
In terms of graduate employment rates in the Education field of study, the University of Western Sydney had the best employment rate of the three network universities in 1988. In 1993, the University of New England had the best graduate employment rate. The University of New England was the only network university to have its graduate employment rate in this field of study increase between 1988 and 1993. UNE's rate increased from 62.1% in 1988 to 66.1% in 1993 which represents an increase of 4.0%; CSU decreased from 70.1% in 1988 to 54.0% in 1993 which represents a decrease of 16.1%; while UWS decreased from 79.3% in 1988 to 57.6% in 1993 which represents a decrease of 21.7%.

In terms of graduate employment rates in the Engineering field of study, the graduate numbers in this field of study were very small for each of the three universities and not significant.

In terms of graduate employment rates in the Health field of study, Charles Sturt University had the best employment rate of the three network universities in 1988. In 1993, the University of New England had the best graduate employment rate. All three network universities' graduate employment rate in this field of study decreased between 1988 and 1993. The University of New England had the smallest decrease falling from 86.5% in 1988 to 72.4% in 1993 which represents a decrease of 14.1%; CSU decreased from 92.5% in 1988 to 62.6% in 1993 which represents a decrease of 29.9%; while UWS decreased from 88.2% in 1988 to 52.3% in 1993 which represents a decrease of 35.9%.

7.3.6.3 Graduate Employment in Law, Science and Veterinary Science

In terms of graduate employment rates in the Law field of study, the graduate numbers in this field of study were very small for each of the three universities and not significant.

In terms of graduate employment rates in the Science field of study, Charles Sturt University had the best employment rate of the three network universities in 1988 and in 1993. All three network universities' graduate employment rate in this field of study decreased between 1988 and 1993. The University of New England had the smallest decrease falling from 51.7% in 1988 to 33.2% in 1993 which represents a decrease of 18.5%; CSU decreased from 91.7% in 1988 to 56.5% in 1993 which represents a decrease of 35.2%; while UWS decreased from 75.7% in 1988 to 36.6% in 1993 which represents a decrease of 39.1%.

In terms of graduate employment rates in the Veterinary Science field of study, none of the three network universities produced a graduate between 1999 and 1993.
7.3.6.4 Graduate Employment in Government and the Private Sector and Further Study

In terms of type of graduate employment or further study in the Arts field of study, the key highlights are:

* Charles Sturt University had the highest employment rate in both government and the private sector in 1988 and in 1993.
* The University of New England had the highest proportion of graduates undertaking further study in 1988 and in 1993.
* All three network universities' employment rate in government and the private sector decreased between 1988 to 1993.
* All three network universities' proportion of graduates undertaking further study increased between 1988 to 1993.
* In 1993, the highest proportion of the network universities' Arts graduates were undertaking further study, followed by equal proportions in government and the private sector.

In terms of type of graduate employment or further study in the Business field of study, the key highlights are:

* Charles Sturt University had the highest employment rate in government in 1988 and in 1993.
* The University of Western Sydney had the highest employment rate in the private sector in 1988 and in 1993.
* The University of New England had the highest proportion of graduates undertaking further study in 1988 and in 1993.
* All three network universities' employment rate in government and the private sector decreased between 1988 to 1993.
* All three network universities' proportion of graduates undertaking further study increased between 1988 to 1993.
* In 1993, the highest proportion of the network universities' Business graduates were employed in the private sector, followed by employment in government, and then undertaking further study.

In terms of type of graduate employment or further study in the Education field of study, the figures are very small because most graduates were employed in schools or higher education. Few of the network universities' education graduates were employed in government, the private sector, or undertook further study.

In terms of type of graduate employment or further study in the Health field of study, the key highlights are:
The University of New England had the highest employment rate in government in 1988 and in 1993.

Charles Sturt University had the highest employment rate in the private sector in 1988 and in 1993.

The University of Western Sydney had the highest proportion of graduates undertaking further study in 1988 and in 1993.

All three network universities' employment rate in government decreased between 1988 to 1993, however, the employment rate in the private sector increased for all three universities.

The proportion of graduates undertaking further study increased between 1988 to 1993 for the University of Western Sydney and Charles Sturt University but decreased slightly for the University of New England.

In 1993, the highest proportion of the network universities' Health graduates were employed in government, followed by employment in the private sector, and then undertaking further study.

In terms of type of graduate employment or further study in the Science field of study, the key highlights are:

- Charles Sturt University had the highest employment rate in both government and the private sector in 1988 and in 1993.
- The University of New England had the highest proportion of graduates undertaking further study in 1988 and in 1993.
- All three network universities' employment rate in government and the private sector decreased between 1988 to 1993.
- All three network universities' proportion of graduates undertaking further study increased between 1988 to 1993.
- In 1993, the highest proportion of the network universities' Science graduates were undertaking further study, followed by employment in the private sector, and then by employment in government.

7.3.6.5 Conclusions

The three network universities did not increase their effectiveness from 1988 to 1993 in terms of their graduate employment rate. Each of the network universities' graduate employment rate decreased between 1988 and 1993 in all fields of study. The only exception was the University of New England which increased its employment rate in the Education field of study.

In terms of graduate employment rates in the "vocationally relevant" fields of study, each network
universities' employment rate decreased between 1988 and 1993 in each of the three most vocationally relevant fields: business, engineering and science. In general terms, the network universities performed best in the business field and poorest in engineering. In broad terms, Charles Sturt performed best of the network universities in terms of producing the best employment rate in these fields; while the University of New England performed best in terms of having the smallest decreases between 1988 and 1993.

In overall terms, Charles Sturt University had the best employment rate of the three network universities in 1988 and in 1993. All three network universities' graduate employment rate decreased between 1988 and 1993. The University of New England had the smallest decrease falling from 64.9% in 1988 to 49.6% in 1993 which represents a decrease of 15.3%; CSU decreased from 80.7% in 1988 to 59.1% in 1993 which represents a decrease of 21.6%; while UWS decreased from 75.0% in 1988 to 50.6% in 1993 which represents a decrease of 24.4%.

This is an important finding because it indicates that the network university member institutions performed better as separate institutions than as part of network universities in one of the key indicators of institution effectiveness. While there may be other factors which contributed to the declining employment rates, such as Australia's economic recession, it is clear that the network universities have not performed well under this performance indicator.

In terms of sector wide comparisons, however, the network universities performed well. In 1991, each of the three network universities had a higher overall graduate employment rate than the Australia-wide average of 50.9%. Charles Sturt University (20.0% higher) and the University of Western Sydney (18.2% higher) performed significantly better than the nation-wide average, while the University of New England performed slightly better (3.6% higher). In terms of comparisons by field of study, the network universities' performance in comparison with the nation-wide average was:

<table>
<thead>
<tr>
<th>Field</th>
<th>UWS</th>
<th>UNE</th>
<th>CSU</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agriculture</td>
<td>18.7% higher</td>
<td>10.1% higher</td>
<td>7.4% higher</td>
</tr>
<tr>
<td>Arts</td>
<td>30.0% higher</td>
<td>11.5% higher</td>
<td>6.6% higher</td>
</tr>
<tr>
<td>Business</td>
<td>21.3% higher</td>
<td>16.5% higher</td>
<td>0.8% lower</td>
</tr>
<tr>
<td>Education</td>
<td>10.4% higher</td>
<td>0.2% higher</td>
<td></td>
</tr>
</tbody>
</table>
This analysis suggests that while the network universities’ graduate employment rates declined between 1988 and 1993, they performed well in terms of Australia-wide comparisons. Charles Sturt University and the University of Western Sydney, in particular, performed exceptionally well by being better than the nation-wide average in all fields of study.

In terms of the analysis of type of graduate employment or further study by field of study, the proportion of the network universities’ graduates employed in government and the private sector decreased from 1988 to 1993 in all fields of study while the proportion of graduates undertaking further study increased in most areas. In general terms, Charles Sturt performed best of the network universities in terms of contributing to government employment rates, this was particularly evident in two of the vocationally relevant fields of business and science. Charles Sturt also performed best in terms of private sector employment, however, the University of Western Sydney performed best in terms of private sector employment in the key field of business. The University of New England performed best in terms of its graduates undertaking further study.
7.3.6 The Network Universities' Effectiveness:

Conclusions

7.3.6.1 Introduction

This research explored five different performance areas in order to assess the effectiveness of the network universities. The performance areas were:

1. Student enrolment and completion.
2. Type of student enrolment.
3. Student enrolment and completion by level of study.
4. Student completions by field of study.
5. Graduate employment rate.

These areas assess the effectiveness of higher education institutions by exploring the following issues:

1. Student enrolment measures the institution's main inputs while student completion measures the main outputs.
2. Type of student enrolment measures the pattern of student study and has implications for the institution in terms of producing increased outputs in minimum time.
3. Student enrolment and completion by level of study measures the proportion of postgraduate and undergraduate students and has implications for the institution in terms of producing a higher proportion of better qualified outputs.
4. Student completions by field of study measures the institution's outputs in terms of their "vocational relevance" and has implications in terms of the proportion of outputs in fields considered by the Government to be vocationally relevant.
5. Graduate employment rate measures the proportion of students who gain employment following their degree and has implications for the institution by measuring the quality of its higher education process through the employability of its outputs.

7.3.6.2 Research Findings

The three network universities increased their effectiveness from 1988 to 1993 in the following performance areas:

1. their fundamental inputs and outputs: student enrolments and completions. Each network university significantly increased their student numbers, student load, and commencing
students between 1988 to 1993. There were also significant increases in student completions.

3 attracting better quality inputs and producing better quality outputs: postgraduate student enrolments and completions. Each network university significantly increased their higher degree by research, higher degree by coursework, and other postgraduate student enrolments and completions between 1988 to 1993.

4 increasing their outputs (graduates) in "vocationally relevant" fields of study. Each network university significantly increased their student completions between 1988 and 1992 in the business and science fields of study, however, only the University of Western Sydney produced graduates in the engineering field of study.

The three network universities did not increase their effectiveness from 1988 to 1993 in the following performance area:

5 their graduate employment rate. Each of the network universities' graduate employment rate decreased between 1988 and 1993 in all fields of study. The only exception was the University of New England which increased its employment rate in the Education field of study. However, the network universities performed well in terms of sector-wide comparisons.

The three network universities' effectiveness did not change significantly from 1988 to 1993 in the following performance area:

2 the type of student enrolment. The enrolment patterns remained reasonably stable at each of the network universities during the period under review.

In terms of each network university's individual performance, the following conclusions can be drawn:

1 their fundamental inputs and outputs: The University of Western Sydney was the fastest growing network university between 1988 to 1993. It doubled its student numbers during the period under review. In broad terms, it grew at more than twice the rate of the University of New England and Charles Sturt University during the same period. There are signs, particularly in student load and commencing students, that UNE and CSU's growth is slowing.

2 the type of student enrolment: In broad terms, Charles Sturt University increased its proportion of full-time students which suggests it had become more effective in terms of producing outputs (graduates) in minimum time; the University of Western Sydney had increased its proportion of part-time students which suggests it had become less effective; while the University of New England had remained stable.
attracting better quality inputs and producing better quality outputs: The University of New England had the most higher degree by research, higher degree by coursework, and other postgraduate student enrolments of the network universities in 1993. It also compared well with other Australian universities. However, this is to be expected because UNE included a former university, with a strong postgraduate student profile, while the other network universities comprised former colleges only.

In terms of student growth, the University of Western Sydney had the strongest growth in higher degree by research enrolments and completions; it also had the strongest growth in higher degree by coursework enrolments, however, Charles Sturt University had the strongest growth in student completions; while the University of New England had the strongest growth in other postgraduate enrolments and completions. The University of Western Sydney also had the strongest growth in bachelor degree student enrolments and completions.

increasing their outputs (graduates) in "vocationally relevant" fields of study: The University of Western Sydney produced the most business graduates of the network universities in 1992 while the University of New England produced the most science graduates. UWS had the strongest growth in business and science graduates between 1988 and 1992. UWS was also the only network university to produce any engineering graduates between 1988 and 1992.

their graduate employment rate: In terms of graduate employment rates in the "vocationally relevant" fields of study, each network universities' employment rate decreased between 1988 and 1993 in each of the three most vocationally relevant fields: business, engineering and science. In general terms, the network universities performed best in the business field and poorest in engineering. In broad terms, Charles Sturt performed best of the network universities in terms of producing the best employment rate in these fields; while the University of New England performed best in terms of having the smallest decreases between 1988 and 1993.

In overall terms, Charles Sturt University had the best employment rate of the three network universities in 1988 and in 1993. All three network universities' graduate employment rate decreased between 1988 and 1993. The University of New England had the smallest decrease falling from 64.9% in 1988 to 49.6% in 1993 which represents a decrease of 15.3%; CSU decreased from 80.7% in 1988 to 59.1% in 1993 which represents a decrease of 21.6%; while UWS decreased from 75.0% in 1988 to 50.6% in 1993 which represents a decrease of 24.4%.
7.3.6.3 Conclusions

The network universities performed well between 1988 and 1993 in terms of their effectiveness. Each network university significantly increased their fundamental inputs and outputs; attracted better quality inputs and produced better quality outputs; and increased their outputs (graduates) in "vocationally relevant" fields of study. The only performance area where their effectiveness had decreased was the graduate employment rate. However, there may be other factors which explain this (ie. the economic recession) and the network universities performed well in graduate employment rates in comparison with Australian higher education institutions as a whole.

It is reasonable to conclude that the student growth at each of the network universities has exceeded the growth which could have been achieved by the members as separate institutions. Certainly the aggregated student enrolment and completion figures in 1988 and 1989 (representing the combined input and output of the member institutions) was significantly less than the figures achieved as network universities in 1993.

Similar conclusions can be drawn in the other effectiveness performance areas. The only area where the network universities did not increase their effectiveness was the graduate employment rate and, even though they decreased in this area, they still performed well in sector-wide comparisons.

In terms of individual performance, the University of Western Sydney performed slightly ahead of Charles Sturt University as the most effective network university from 1988 to 1993. UWS's strong performance, in terms of institutional effectiveness, is largely based on its growth in inputs and outputs. It also performed well in attracting better quality inputs, producing better quality outputs, and in producing outputs in "vocationally relevant" fields of study. CSU also performed well in these areas and increased its capacity to produce outputs in minimum time (increased proportion of full-time students). CSU also performed best of the network universities in terms of graduate employment rates. UNE performed well during the period under review but finished behind the two other network universities in terms of overall effectiveness.

7.4 Efficiency of the Network Structure

7.4.1 Introduction

This research reviews the efficiency of Australia's network universities in the period 1988 to 1993 in terms of the Federal Government's educational objectives for higher education. In chapter four it was
shown how the Federal Government wanted to improve the efficiency of Australia's higher education system because it felt that this would make them more effective which would, in turn, help improve the nation's economic performance. The Green and White Paper proposals were made in the context of decreasing government expenditure on higher education, in real terms, and rising community expectations for improved value for money from public institutions.

The White Paper's definition of effective management may be found in this statement:

"The Government's aim is to enhance the autonomy and capacity of institutions to direct their resources flexibly and effectively to meet their designated goals...As autonomy increases, however, so the need for accountability grows".

This statement reveals that the Government wanted to provide universities with the autonomy to manage their resources in order to achieve mutually agreed goals but in return for autonomy they would need to improve their performance.

The White Paper's final section was Organisational Effectiveness. It focussed on institutional management and staffing and emphasised the need for change in the administrative structures and procedures of institutions. The White Paper stated that effective management at the institutional level would be the key to achieving many of the Government's objectives for the UNS:

a) growth in areas of national need;
b) an effective partnership with other parties to the education and training process, including employers;
c) improvements in equity and access to higher education; and
d) efficiency of operation.

These objectives will be explored within the review of the efficiency of the network universities. While it would be possible to assess the performance of the UNS in terms of these objectives, this is beyond the scope of this research. These objectives and the efficiency of the network universities during the period 1988 to 1993 will be explored in terms of performance indicators provided by "Higher Education: A Report". The analysis compares the performance of each of the network universities from 1988 to 1993. In 1988 and 1989, the performance of the network member institutions was combined to produce an aggregated figure for each network university. This is then used to compare the performance of the network universities in terms of whether the combined performance of the members has improved since 1988.
7.4.2 Staff Data

Staff data analysis is a way to assess a higher education institution's efficiency because it measures the institution's staffing profile. A higher education institution's staff is its most valuable resource. The nature of the higher education process means that the institution's performance in taking its inputs (students enrolments) to produce high quality outputs (graduates) is largely determined by the performance of its staff. Staff salaries also comprise the majority of the institution's operating funds expenditure. The institution's staffing profile, therefore, reveals much about the efficiency with which it uses its funds.

7.4.2.1 Staffing Profile: Work Contract

The majority of staff at each of the network universities were employed full-time in 1988 and in 1993. The University of New England had the highest proportion of full-time staff (89%) in 1988, however, Charles Sturt University had the highest proportion in 1993 (83%). The University of New England had the highest proportion of full-time fractional staff in 1988 and in 1993. The University of Western Sydney had the highest proportion of casual staff in 1988 and in 1993.

The proportion of full-time staff at each of the network universities decreased slightly between 1988 and 1993 while the proportion of casual staff increased slightly. However, this trend was experienced throughout Australia's higher education institutions. In 1988, 84% of all Australian higher education employees were employed full-time, 9% were casual, and 7% were fractional full-time employees. In comparison with the industry norm, the University of New England and Charles Sturt University had higher proportions of full-time employees and less casual employees, however, the University of Western Sydney had the inverse relationship. In 1993, 81% of all Australian higher education employees were employed full-time, 10% were casual, and 9% were fractional full-time employees. The network universities had roughly the same staffing profile, in terms of work contract, as the industry norm, however, they did have a slightly higher proportion of casual staff.

7.4.2.2 Staffing Profile: Function

The network universities' staffing profiles were different, in terms of staffing function, in 1988 and in 1993. In 1988, the University of Western Sydney had similar proportions of staff in teaching only (49%) and non-academic (51%) functions; Charles Sturt University had a higher proportion of non-academic staff (57%) than teaching only staff (43%); however, the University of New England had a higher proportion of non-academic staff (62%) and its academic staff were involved in teaching and research...
(21%), teaching only (14%), and research only (3%). This reflected the inclusion of the former UNE and its research profile.

From 1988 to 1993, each of the network universities decreased their proportions of teaching only staff and research only staff and increased their proportions of teaching and research staff and non-academic staff. However, this trend was experienced throughout Australia's higher education institutions. In 1988, 51% of all Australian higher education employees were non-academic staff, 23% were teaching and research staff, 17% were teaching only staff, while 9% were research only. The University of New England was the only network university to resemble this staffing profile in 1988, however, it had a slightly higher proportion of non-academic staff than the industry norm. Both the University of Western Sydney and Charles Sturt University had a different staffing profile because they comprised CAEs and therefore did not have a strong research component. In 1993, 53% of all Australian higher education employees were non-academic staff, 30% were teaching and research staff, 9% were teaching only staff, while 8% were research only. The network universities had a similar staffing profile compared with the industry norm, however, the University of New England and Charles Sturt had a slightly higher proportion of non-academic staff and less research staff while the University of Western Sydney had more teaching and research staff and less research only staff.

7.4.2.3 Staffing Profile: Sex

The network universities' staffing profiles were also different, in terms of staff sex, in 1988 and in 1993. In 1988, the University of Western Sydney had similar proportions of male staff (51%) and female staff (49%); Charles Sturt University had a higher proportion of male staff (59%) compared with female staff (41%); while, the University of New England had an even higher proportion of male staff (63%) compared with female staff (37%).

From 1988 to 1993, each of the network universities increased their proportions of female staff. In 1993, the University of Western Sydney now had a higher proportion of female staff (54%) compared with male staff (46%); Charles Sturt University still had a higher proportion of male staff (54%) compared with female staff (46%); while, the University of New England still had the highest proportion of male staff (56%) compared with female staff (44%).

However, this trend towards higher proportions of female staff was experienced throughout Australia's higher education institutions. In 1988, 58% of all Australian higher education employees were male while 42% were female. In terms of comparisons with the sector as a whole, the University of Western Sydney had a higher proportion of female staff than the industry norm, the University of New England had a higher proportion of male staff, while Charles Sturt's proportion of male and female staff resembled the industry norm. In 1993, 53% of all Australian higher education employees were male while 47% were female. In terms of comparisons with the sector as a whole, the University of Western
Sydney still had a higher proportion of female staff than the industry norm, the University of New England still had a higher proportion of male staff, while Charles Sturt's proportion of male and female staff still resembled the industry norm.

7.4.2.4 Staffing Profile: Current Duties Term

The network universities' staffing profiles were also different, in terms of staff current duties term, in 1988 and in 1993. Charles Sturt University had the highest proportion of tenurable staff of the network universities in 1988 (82%) and in 1993 (75%); the University of Western Sydney had the highest proportion of casual staff in 1988 (13%) and in 1993 (14%); while the University of New England had the highest proportion of limited term staff in 1988 (22%) and in 1993 (19%).

In general terms, each of the network universities decreased their proportions of tenurable staff and increased their proportions of limited term and casual staff. However, this trend towards lower proportions of tenurable staff was experienced throughout Australia's higher education institutions. In 1988, 62% of Australia's higher education employees were tenurable, 23% were on limited term contracts, 9% were casual staff, and 6% were other on other term contracts. In 1993, 60% of Australia's higher education employees were tenurable, 26% were on limited term contracts, 10% were casual staff, and 4% were other on other term contracts. In terms of sector wide comparisons, the network universities had a higher proportion of tenurable staff in 1988 than the industry norm. In 1993, Charles Sturt still had a higher proportion of tenurable staff while the University of Western Sydney and the University of New England had moved towards the industry norm.

7.4.2.5 Staffing Profile: Academic Classifications

The University of New England had the highest proportion of senior academic staff of the three network universities in 1988 and in 1993. In 1988, 5% of UNE academic staff were above senior lecturers and 9% were senior lecturers and while CSU and UWS had only slightly lower proportions of senior staff, they had significantly higher proportions of junior staff: 30% of UWS academic staff were lecturers while CSU had 20% and UNE 15%. In 1993, the network universities' proportion of senior academic staff had remained the same as in 1988, however, UNE and UWS had slightly increased their proportions of above senior lecturer staff. The proportion of junior academic staff had also remained similar, however, UWS had decreased its proportion of lecturers.

The University of Western Sydney had the highest proportion of academic staff of the three network universities in 1988 and in 1993. The difference between UWS and the two other network universities was statistically significant in 1988 and in 1993 in terms of the proportion of academic staff compared
with non-academic staff. In 1988, 51% of UWS staff were academic staff while 49% were non-academic; CSU had 42% academic staff and 58% non-academic; while UNE had 38% academic and 62% non-academic. In 1993, 47% of UWS staff were academic staff while 53% were non-academic; CSU had 39% academic staff and 61% non-academic; while UNE still had 38% academic and 62% non-academic.

7.4.2.6 Staffing Profile: Non-Academic Classifications

The University of Western Sydney had the highest proportion of academic support staff of the three network universities in 1988 (17%). However, Charles Sturt University had the highest proportion in 1993 (18%). CSU and UNE increased their proportion of academic support staff between 1988 and 1993, however, UWS decreased its proportion.

All three network universities had the same proportion of student services staff in 1988 (5%). However, Charles Sturt University had the highest proportion in 1993 (7%). CSU increased its proportion of student services between 1988 and 1993, however, UNE and UWS remained the same (5%).

Charles Sturt University had the highest proportion of overhead services staff of the three network universities in 1988 (31%) and in 1993 (26%). CSU and UNE decreased their proportion of overhead services staff between 1988 and 1993, however, UWS remained the same (24%).

7.4.3 Staff Data Performance Indicators

Staff data performance indicators are a way to assess a higher education institution's efficiency because it uses the results of the staff data analysis to produce more meaningful performance measures. The analysis which follows uses the findings of the staff data analysis to measure the network universities' efficiency in terms of their staffing profile.

7.4.3.1 Non-Academic Staff to Academic Staff Ratio

This analysis compares the ratio of non-academic staff to academic staff (EFTS). It is designed to measure the institution's balance of non-academic and academic staff.
The University of New England had the highest ratio of non-academic staff to academic staff of the network universities in 1988 and in 1993. All three network universities increased their ratio of non-academic staff to academic staff between 1988 and 1993. The University of Western Sydney had the largest increase from 0.95 in 1988 to 1.14 in 1993 which represents an increase of 0.19. Charles Sturt University increased from 1.37 in 1988 to 1.54 in 1993 which represents an increase of 0.17; while the University of New England increased from 1.59 in 1988 to 1.64 in 1993 which represents an increase of 0.05.

These increases reflect the network universities' increased proportion of non-academic staff compared with academic staff. However, they are not indicative of the Australia-wide trend. In 1988, the ratio of non-academic staff to academic staff for all Australian higher education institutions was 1.26. In 1993, the ratio was 1.24. Therefore, while the network universities' ratio of non-academic staff to academic staff increased between 1988 and 1993, the industry norm decreased slightly.

In terms of sector-wide comparisons, the University of New England and Charles Sturt University had significantly higher ratios of non-academic staff to academic staff than the industry norm in 1988 while the University of Western Sydney had a significantly lower ratio. In 1993, UNE and CSU were again significantly higher while UWS was still lower. However, UNE and CSU were moving away from the industry norm while UWS was moving towards it. In terms of comparison with the universities created by the White Paper Reforms (those established between 1987 and 1992), UNE had the highest ratio of non-academic staff to academic staff in 1993 (of 17 institutions); CSU had the 2nd highest; while UWS had the 9th highest. Indeed, UNE and CSU's ratio of non-academic staff to academic staff was higher than the group average of the older established universities and only four of these older universities had higher ratios.

### 7.4.3.2 Senior Academic Staff to Total Academic Staff Ratio

This analysis compares the ratio of senior academic staff to the institution's total academic staff numbers (EFTS). It is designed to measure the seniority of the institution's academic staffing profile. Senior academic staff include those above senior lecturer and senior lecturer.

The University of New England had the highest ratio of senior academic staff to total academic staff of the network universities in 1988 and in 1993. UNE and UWS increased their ratio of senior academic staff to total academic staff between 1988 and 1993 while CSU remained the same. Both UNE and UWS increased their ratio by 0.04 between 1988 and 1993.

These increases reflect the network universities' increased proportion of senior academic staff. However, they are not indicative of the Australia-wide trend. In 1988, the ratio of senior academic staff to total academic staff for all Australian higher education institutions was 0.40. In 1993, the ratio was
Therefore, while the network universities' ratio of senior academic staff to total academic staff increased between 1988 and 1993, the industry norm decreased slightly.

In terms of sector-wide comparisons, all three network universities had lower ratios of senior academic staff to total academic staff than the industry norm in 1988. UWS and CSU had significantly lower ratios. In 1993, UNE was slightly higher while UWS and CSU were still significantly lower. UNE was moving away from the industry norm while UWS was moving towards it and CSU remained stable. In terms of comparison with the universities created by the White Paper Reforms (those established between 1987 and 1992), UNE had the 3rd highest ratio of senior academic staff to total academic staff in 1993 (of 17 institutions); CSU had the 13th highest; while UWS had the 15th highest.

7.4.3.3 Non-Academic Staff Classifications to Academic Staff Ratio

This analysis compares the ratio of the three main groups of non-academic staff classifications to the institution's academic staff (EFTS). The three classifications are academic support, student services, and overhead services. It is designed to measure the level of support for the institution's academic activities in terms of staff ratios.

7.4.3.3.1 Academic Support Staff to Academic Staff Ratio

The University of Western Sydney had the highest ratio of academic support staff to academic staff of the network universities in 1988. However, Charles Sturt University had the highest ratio in 1993. CSU and UNE increased their ratio of academic support staff to academic staff between 1988 and 1993 while UWS decreased its ratio. CSU had the largest increase from 0.28 in 1988 to 0.40 in 1993 which represents an increase of 0.12; UNE increased from 0.25 in 1988 to 0.28 in 1993 which represents an increase of 0.03; while UWS decreased from 0.31 in 1988 to 0.20 in 1993 which represents a decrease of 0.11.

These increases reflect the network universities' increased proportion of academic support staff. However, they are not indicative of the Australia-wide trend. In 1988, the ratio of academic support staff to academic staff for all Australian higher education institutions was 0.18. In 1993, the ratio was 0.17. Therefore, while two of the network universities' ratio of academic support staff to academic staff increased between 1988 and 1993, the industry norm decreased slightly.

In terms of sector-wide comparisons, all three network universities had higher ratios of academic support staff to academic staff than the industry norm in 1988 and in 1993. CSU was significantly higher while UNE and UWS were slightly higher. CSU and UNE were moving away from the industry
norm while UWS was moving towards it. In terms of comparison with the universities created by the White Paper Reforms (those established between 1987 and 1992), CSU had the 2nd highest ratio of academic support staff to academic staff in 1993 (of 17 institutions); UNE had the 5th highest; while UWS had the 10th highest.

7.4.3.3.2 Student Services Staff to Academic Staff Ratio

Charles Sturt University had the highest ratio of student services staff to academic staff of the network universities in 1988 and in 1993. CSU and UNE increased their ratio of student services staff to academic staff between 1988 and 1993 while UWS decreased its ratio. CSU had the largest increase from 0.11 in 1988 to 0.16 in 1993 which represents an increase of 0.05; UNE increased from 0.10 in 1988 to 0.11 in 1993 which represents an increase of 0.01; while UWS decreased from 0.09 in 1988 to 0.08 in 1993 which represents a decrease of 0.01.

These increases reflect the network universities' increased proportion of student services staff. They are indicative of the Australia-wide trend. In 1988, the ratio of student services staff to academic staff for all Australian higher education institutions was 0.03. In 1993, the ratio was 0.04. Therefore, while two of the network universities' ratio of student services staff to academic staff increased slightly between 1988 and 1993, the industry norm also increased slightly.

In terms of sector-wide comparisons, all three network universities had higher ratios of student services staff to academic staff than the industry norm in 1988 and in 1993. CSU and UNE were significantly higher than the industry norm in 1993. CSU and UNE were moving away from the industry norm while UWS was moving towards it. In terms of comparison with the universities created by the White Paper Reforms (those established between 1987 and 1992), CSU had the highest ratio of student services staff to academic staff in 1993 (of 17 institutions); UNE had the 4th highest; while UWS had the 6th highest.

7.4.3.3.3 Overhead Services Staff to Academic Staff Ratio

Charles Sturt University had the highest ratio of overhead services staff to academic staff of the network universities in 1988 and in 1993. All three network universities decreased their ratio of overhead services staff to academic staff between 1988 and 1993. CSU had the largest decrease from 0.64 in 1988 to 0.58 in 1993 which represents a decrease of 0.06; UNE decreased from 0.52 in 1988 to 0.48 in 1993 which represents a decrease of 0.04; while UWS decreased from 0.44 in 1988 to 0.41 in 1993 which represents a decrease of 0.03.

These decreases reflect the network universities' decreased proportion of overhead services staff. They are indicative of the Australia-wide trend. In 1988, the ratio of overhead services staff to academic
staff for all Australian higher education institutions was 0.31. In 1993, the ratio was 0.28. Therefore, while all three network universities’ ratio of overhead services staff to academic staff decreased slightly between 1988 and 1993, the industry norm also decreased slightly.

In terms of sector-wide comparisons, all three network universities had higher ratios of overhead services staff to academic staff than the industry norm in 1988 and in 1993. All three were significantly higher than the industry norm in 1993. All three were moving towards the industry norm. In terms of comparison with the universities created by the White Paper Reforms (those established between 1987 and 1992), CSU had the 2nd highest ratio of overhead services staff to academic staff in 1993 (of 17 institutions); UNE had the 3rd highest; while UWS had the 9th highest.

### 7.4.4 Student/Staff Ratios

Student/staff ratios are a way to assess a higher education institution’s efficiency because it combines the results of the student and staff data analysis to produce more conclusive performance measures. The analysis which follows uses the findings of the student and staff data analysis to measure the network universities’ efficiency in terms of their staffing profile. The analysis of the student/staff ratio by area of study examines the institution’s staffing commitment in the most vocationally relevant fields of study (ie. business, engineering and science).

#### 7.4.4.1 Student/Staff Ratio

##### 7.4.4.1.1 All Staff

The University of New England had the lowest student to staff ratio, in terms of all staff, of the three network universities in 1988 and in 1993. All three network universities increased their student to all staff ratio between 1988 and 1993. UNE had the largest increase from 4.73 in 1988 to 5.77 in 1993 which represents an increase of 1.04; UWS increased from 6.51 in 1988 to 7.49 in 1993 which represents an increase of 0.98; while CSU increased from 6.61 in 1988 to 6.98 in 1993 which represents an increase of 0.37.

These increases reflect the network universities’ increased student numbers (EFTSU) in comparison with proportionately less increases in staff numbers (EFTS). They are indicative of the Australia-wide trend. In 1988, the student to all staff ratio for all Australian higher education institutions was 5.00. In 1993, the ratio was 5.65. Therefore, while all three network universities’ student to all staff ratio
increased slightly between 1988 and 1993, the industry norm also increased slightly.

In terms of sector-wide comparisons, CSU and UWS had significantly higher student to all staff ratios than the industry norm in 1988 while UNE had a slightly lower ratio. In 1993, all three were higher than the industry norm and UWS and CSU were significantly higher. All three were moving away from the industry norm. In terms of comparison with the universities created by the White Paper Reforms (those established between 1987 and 1992), UNE had the 2nd lowest student to all staff ratio in 1993 (of 17 institutions); CSU had the 8th lowest; while UWS had the 13th lowest.

7.4.4.1.2 Academic Staff

The University of Western Sydney had the lowest student to staff ratio, in terms of academic staff, of the three network universities in 1988. However, the University of New England had the lowest ratio in 1993. All three network universities increased their student to academic staff ratio between 1988 and 1993. UWS had the largest increase from 12.75 in 1988 to 16.00 in 1993 which represents an increase of 3.25; CSU increased from 15.68 in 1988 to 17.73 in 1993 which represents an increase of 2.05; while UNE increased from 13.21 in 1988 to 15.25 in 1993 which represents an increase of 2.04.

These increases reflect the network universities' increased student numbers (EFTSU) in comparison with proportionately less increases in academic staff numbers (EFTS). They are indicative of the Australia-wide trend. In 1988, the student to academic staff ratio for all Australian higher education institutions was 11.30. In 1993, the ratio was 12.65. Therefore, while all three network universities' student to academic staff ratio increased between 1988 and 1993, the industry norm also increased slightly.

In terms of sector-wide comparisons, all three network universities had higher student to academic staff ratios than the industry norm in 1988. CSU had a significantly higher ratio. In 1993, all three were significantly higher than the industry norm. All three were moving away from the industry norm. In terms of comparison with the universities created by the White Paper Reforms (those established between 1987 and 1992), UNE had the 10th lowest student to academic staff ratio in 1993 (of 17 institutions); UWS had the 13th lowest; while CSU had the 16th lowest.

7.4.4.1.3 Non-Academic Staff

The University of New England had the lowest student to staff ratio, in terms of non-academic staff, of the three network universities in 1988 and in 1993. All three network universities increased their student to non-academic staff ratio between 1988 and 1993. UNE had the largest increase from 8.29 in 1988 to 9.28 in 1993 which represents an increase of 0.99; UWS increased from 13.36 in 1988 to 14.07 in 1993 which represents an increase of 0.71; while CSU increased from 11.43 in 1988 to
11.50 in 1993 which represents an increase of 0.07.

These increases reflect the network universities' increased student numbers (EFTSU) in comparison with proportionately less increases in non-academic staff numbers (EFTS). They are indicative of the Australia-wide trend. In 1988, the student to non-academic staff ratio for all Australian higher education institutions was 8.98. In 1993, the ratio was 10.20. Therefore, while all three network universities' student to academic staff ratio increased slightly between 1988 and 1993, the industry norm also increased slightly.

In terms of sector-wide comparisons, UWS and CSU had higher student to non-academic staff ratios than the industry norm in 1988 while UNE had a slightly lower ratio. UWS had a significantly higher ratio. In 1993, UWS and CSU were again higher than the industry norm and UNE was lower. UWS was significantly higher than the industry norm. UWS and CSU were moving away from the industry norm while UNE was moving towards it. In terms of comparison with the universities created by the White Paper Reforms (those established between 1987 and 1992), UNE had the 2nd lowest student to non-academic staff ratio in 1993 (of 17 institutions); CSU had the 5th lowest; while UWS had the 10th lowest.

7.4.4.2 Student/Academic Staff Ratio by Area of Study

7.4.4.2.1 Student/Academic Staff Ratio by Arts, Business, Education and Health

The University of New England had the lowest student to academic staff ratio, in terms of the Arts field of study, of the three network universities in 1988 and in 1993. All three network universities increased their student to academic staff ratio in the Arts field of study between 1988 and 1993. UWS had the largest increase from 10.99 in 1988 to 17.53 in 1993 which represents an increase of 6.54; UNE increased from 10.76 in 1988 to 16.77 in 1993 which represents an increase of 6.01; while CSU increased from 14.04 in 1988 to 18.14 in 1993 which represents an increase of 4.10.

These increases reflect the network universities' increased student numbers (EFTSU) in comparison with proportionately less increases in academic staff numbers (EFTS) in the Arts field of study. They are indicative of the Australia-wide trend. In 1988, the student to academic staff ratio in the Arts field of study for all Australian higher education institutions was 6.73. In 1993, the ratio was 15.22. Therefore, while all three network universities' student to academic staff ratio in the Arts field of study increased significantly between 1988 and 1993, the industry norm also increased significantly.

In terms of sector-wide comparisons, all three network universities had higher student to academic staff ratios in the Arts field of study than the industry norm in 1988. CSU had a significantly higher ratio. In 1993, the three network universities were again higher than the industry norm, however, they were
much closer to the norm than in 1988. All three network universities were moving towards the industry norm in 1993.

The University of Western Sydney had the lowest student to academic staff ratio, in terms of the Business field of study, of the three network universities in 1988. However, the University of New England had the lowest ratio in 1993. All three network universities increased their student to academic staff ratio in the Business field of study between 1988 and 1993. UWS had the largest increase from 14.15 in 1988 to 20.60 in 1993 which represents an increase of 6.45; CSU increased from 19.21 in 1988 to 22.63 in 1993 which represents an increase of 3.42; while UNE increased from 18.26 in 1988 to 20.25 in 1993 which represents an increase of 1.99.

These increases reflect the network universities' increased student numbers (EFTSU) in comparison with proportionately less increases in academic staff numbers (EFTS) in the Business field of study. They are indicative of the Australia-wide trend. In 1988, the student to academic staff ratio in the Business field of study for all Australian higher education institutions was 8.21. In 1993, the ratio was 20.80. Therefore, while all three network universities' student to academic staff ratio in the Business field of study increased slightly between 1988 and 1993, the industry norm increased significantly.

In terms of sector-wide comparisons, all three network universities had higher student to academic staff ratios in the Business field of study than the industry norm in 1988. CSU and UNE had significantly higher ratios. In 1993, only CSU was higher than the industry norm, UNE and UWS had lower ratios. UWS and CSU were moving towards the industry norm in 1993 while UNE was moving away from the norm.

The University of Western Sydney had the lowest student to academic staff ratio, in terms of the Education field of study, of the three network universities in 1988. However, the University of New England had the lowest ratio in 1993. UWS and CSU increased their student to academic staff ratio in the Education field of study between 1988 and 1993 while UNE decreased its ratio. UWS had the largest increase from 11.82 in 1988 to 16.97 in 1993 which represents an increase of 5.15; while CSU increased from 16.81 in 1988 to 17.86 in 1993 which represents an increase of 1.05. UNE decreased from 29.13 in 1988 to 14.80 in 1993 which represents a decrease of 14.33.

UWS and CSU's increases reflect the network universities' increased student numbers (EFTSU) in comparison with proportionately less increases in academic staff numbers (EFTS) in the Education field of study. They are indicative of the Australia-wide trend. In 1988, the student to academic staff ratio in the Education field of study for all Australian higher education institutions was 3.42. In 1993, the ratio was 14.36. Therefore, while UWS's and CSU's student to academic staff ratio in the Education field of study increased slightly between 1988 and 1993, the industry norm increased significantly.

In terms of sector-wide comparisons, all three network universities had higher student to academic staff ratios in the Education field of study than the industry norm in 1988. UNE had a significantly
higher ratio. In 1993, all three universities were again higher than the industry norm. All three were moving towards the industry norm in 1993.

The University of Western Sydney had the lowest student to academic staff ratio, in terms of the Health field of study, of the three network universities in 1988 and in 1993. All three network universities decreased their student to academic staff ratio in the Health field of study between 1988 and 1993. CSU had the largest decrease from 25.83 in 1988 to 15.52 in 1993 which represents a decrease of 10.31; UNE decreased from 17.83 in 1988 to 15.94 in 1993 which represents a decrease of 1.89; while UWS decreased from 13.00 in 1988 to 12.66 in 1993 which represents a decrease of 0.34.

These decreases reflect the network universities' increased student numbers (EFTSU) in comparison with proportionately more increases in academic staff numbers (EFTS) in the Health field of study. They are not indicative of the Australia-wide trend. In 1988, the student to academic staff ratio in the Health field of study for all Australian higher education institutions was 5.46. In 1993, the ratio was 11.44. Therefore, while the three network universities' student to academic staff ratio in the Health field of study decreased slightly between 1988 and 1993, the industry norm increased significantly.

In terms of sector-wide comparisons, all three network universities had higher student to academic staff ratios in the Health field of study than the industry norm in 1988. CSU had a significantly higher ratio. In 1993, all three universities were again higher than the industry norm. All three were moving towards the industry norm in 1993.

### 7.4.4.2.2 Student/Academic Staff Ratio in Maths, Science, Other, and Total

The three network universities did record a student to staff ratio in the Maths field of study until 1991. This was because students were not enrolled in the Maths field of study in 1988, 1989, or 1990.

The University of Western Sydney had the lowest student to academic staff ratio, in terms of the Maths field of study, of the three network universities in 1991. However, UNE had the lowest ratio in 1993. All three network universities decreased their student to academic staff ratio in the Maths field of study between 1991 and 1993. CSU had the largest decrease from 26.84 in 1991 to 17.91 in 1993 which represents a decrease of 8.93; UNE decreased from 16.91 in 1991 to 13.00 in 1993 which represents a decrease of 3.91; while UWS did not record a ratio in 1993.

These decreases reflect the network universities' increased student numbers (EFTSU) in comparison with proportionately more increases in academic staff numbers (EFTS) in the Maths field of study. They are not indicative of the Australia-wide trend. In 1988, the student to academic staff ratio in the Maths field of study for all Australian higher education institutions was 3.48. In 1993, the ratio was 15.46. Therefore, while the three network universities' student to academic staff ratio in the Maths field of study decreased slightly between 1988 and 1993, the industry norm increased significantly.
it is not possible to make sector-wide comparisons in this field of study because all three network universities did not record a ratio in 1988, 1989 or 1990 while UWS did not record a ratio in 1993.

The University of Western Sydney had the lowest student to academic staff ratio, in terms of the Sciences field of study, of the three network universities in 1988 and in 1993. All three network universities decreased their student to academic staff ratio in the Sciences field of study between 1988 and 1993. UNE had the largest decrease from 15.13 in 1988 to 9.52 in 1993 which represents a decrease of 5.61; CSU decreased from 17.30 in 1988 to 13.75 in 1993 which represents a decrease of 3.55; while UWS decreased from 10.16 in 1988 to 7.84 in 1993 which represents a decrease of 2.32.

These decreases reflect the network universities' increased student numbers (EFTSU) in comparison with proportionately more increases in academic staff numbers (EFTS) in the Sciences field of study. They are not indicative of the Australia-wide trend. In 1988, the student to academic staff ratio in the Sciences field of study for all Australian higher education institutions was 8.29. In 1993, the ratio was 12.32. Therefore, while the three network universities' student to academic staff ratio in the Sciences field of study decreased slightly between 1988 and 1993, the industry norm increased slightly.

In terms of sector-wide comparisons, all three network universities had higher student to academic staff ratios in the Sciences field of study than the industry norm in 1988. In 1993, UWS and UNE were lower than the industry norm while CSU was slightly higher. CSU was moving towards the industry norm in 1993 while UWS and UNE were moving away from the norm.

The University of Western Sydney had the lowest student to academic staff ratio, in terms of the "other" field of study, of the three network universities in 1988. However, UNE had the lowest ratio in 1993. UWS increased its student to academic staff ratio in the "other" field of study between 1988 and 1993 while CSU and UNE decreased their ratio. CSU had the largest decrease from 24.22 in 1988 to 13.86 in 1993 which represents a decrease of 10.36; while UNE decreased from 14.66 in 1988 to 10.33 in 1993 which represents a decrease of 4.33. UWS increased from 11.20 in 1988 to 13.86 in 1993 which represents an increase of 2.66.

CSU's and UNE's decreases reflect the network universities' increased student numbers (EFTSU) in comparison with proportionately more increases in academic staff numbers (EFTS) in the "other" field of study. They are not indicative of the Australia-wide trend. In 1988, the student to academic staff ratio in the "other" field of study for all Australian higher education institutions was 4.38. In 1993, the ratio was 12.70. Therefore, while CSU's and UNE's student to academic staff ratio in the "other" field of study decreased slightly between 1988 and 1993, the industry norm increased significantly.

In terms of sector-wide comparisons, all three network universities had higher student to academic staff ratios in the "other" field of study than the industry norm in 1988. CSU had a significantly higher
ratio. In 1993, CSU and UWS were again higher than the industry norm while UNE was lower. All three were moving away from the industry norm in 1993.

The University of Western Sydney had the lowest student to academic staff ratio, in terms of all fields of study, of the three network universities in 1988. However, UNE had the lowest ratio in 1993. UWS and CSU increased their student to academic staff ratio in all fields of study between 1988 and 1993 while UNE decreased its ratio. CSU had the largest increase from 14.31 in 1988 to 15.48 in 1993 which represents an increase of 1.17; while UWS increased from 12.52 in 1988 to 12.89 in 1993 which represents an increase of 0.37. UNE decreased from 13.16 in 1988 to 11.49 in 1993 which represents a decrease of 1.67.

UWS's and CSU's increases reflect the network universities' increased student numbers (EFTSU) in comparison with proportionately less increases in academic staff numbers (EFTS) in all fields of study. They are indicative of the Australia-wide trend. In 1988, the student to academic staff ratio in all fields of study for all Australian higher education institutions was 5.53. In 1993, the ratio was 14.89. Therefore, while UWS's and CSU's student to academic staff ratio in all fields of study increased slightly between 1988 and 1993, the industry norm increased significantly.

In terms of sector-wide comparisons, all three network universities had higher student to academic staff ratios in all fields of study than the industry norm in 1988. In 1993, only CSU was again higher than the industry norm. UWS and UNE were lower than the norm. UWS and UNE were moving towards the industry norm in 1993 while CSU was moving away from the norm.

**7.4.5 Financial Performance Indicators**

**7.4.5.1 Source of Income**

**7.4.5.1.1 Overview**

The source of income analysis is particularly important in terms of indicating funding growth by type of funds. Similarly, whether the source of income is from Government or Non-Government is an indicator of an institution's success in attracting Commonwealth and State Government funds and funds from other sources. The increasing commercialisation of higher education means that an increase in the proportion of non-government funds is a strong measure of performance and institutional efficiency.

The analysis compares the aggregated network university institutions from 1990 to 1992. Data was not available for UNE in 1989, however, it was available for UWS and CSU which allows for an additional analysis. Unfortunately, data was not available for any of the network universities in 1988.
The University of New England had the highest income of the three network universities in 1990 and in 1992. All three network universities significantly increased their income between 1990 and 1992. CSU had the largest increase from $73.6 million in 1990 to $103.8 million in 1992 which represents an increase of 41.2%; UWS increased from $124.3 million in 1990 to $161.2 million in 1992 which represents an increase of 29.7%; while UNE increased from $149.5 million to $166.2 million which represents an increase of 11.1%.

The additional analysis indicates that both CSU and UWS significantly increased their income between 1989 and 1992. UWS increased from $108.6 million in 1989 to $161.2 million in 1992 which represents an increase of 48.5% while CSU increased from $70.1 million in 1989 to $103.8 million in 1992 which represents an increase of 48.2%.

These increases are indicative of the Australia-wide trend. In 1989, the average income for all Australian higher education institutions was $61.9 million. In 1991, the average income was $127.0 million. This represents an increase of 105.2%. Therefore, while the three network universities' income increased significantly between 1989 and 1992, the industry norm also increased significantly.

In terms of sector wide comparisons, in 1989 all three network universities would have had a higher income than the industry norm. UNE and UWS would have had significantly higher incomes than the norm. However, of the network university institutions, only the former UNE had a higher income than the industry norm. In 1991, both UWS and UNE had higher incomes than the industry norm while CSU had a lower income than the norm.

7.4.5.1.2 Type of Income Source

UNE had the highest recurrent funds income of the three network universities in 1990 and in 1992. All three network universities significantly increased their recurrent funds between 1990 and 1992. UWS had the largest increase from $52.4 million in 1990 to $74.8 million in 1992 which represents an increase of 42.7%; CSU increased from $39.3 million in 1990 to $47.2 million in 1992 which represents an increase of 20.1%; while UNE increased from $70.2 million to $80.3 million which represents an increase of 14.4%.

The additional analysis indicates that both UWS and CSU significantly increased their recurrent funds between 1989 and 1992. UWS increased from $43.8 million in 1989 to $74.8 million in 1992 which represents an increase of 70.8% while CSU increased from $37.4 million in 1989 to $47.2 million in 1992 which represents an increase of 26.2%.

UNE had the highest HECS funds income of the three network universities in 1990, however, UWS had the highest HECS funds in 1992. All three network universities significantly increased their HECS
funds between 1990 and 1992. UWS had the largest increase from $15.3 million in 1990 to $24.7 million in 1992 which represents an increase of 61.4%; UNE increased from $17.0 million to $24.4 million which represents an increase of 43.5%; while CSU increased from $12.2 million in 1990 to $17.5 million in 1992 which represents an increase of 43.4%.

The additional analysis indicates that both UWS and CSU significantly increased their HECS funds between 1989 and 1992. UWS increased from $12.8 million in 1989 to $24.7 million in 1992 which represents an increase of 92.9% while CSU increased from $11.9 million in 1989 to $17.5 million in 1992 which represents an increase of 47.0%.

UWS had the highest capital funds income of the three network universities in 1990 and in 1992. CSU and UNE significantly increased their capital funds between 1990 and 1992, however, UWS's capital funds decreased. CSU had the largest increase from $0.2 million in 1990 to $9.6 million in 1992 which represents an increase of 4,700% while UNE increased from $6.9 million in 1989 to $11.6 million which represents an increase of 68.1%. UWS decreased from $22.8 million in 1990 to $18.9 million in 1992 which represents a decrease of 17.1%.

The additional analysis indicates that CSU significantly increased its capital funds between 1989 and 1992 from $1.1 million in 1989 to $9.6 million in 1992 which represents an increase of 773%. UWS decreased from $20.2 million in 1989 to $18.9 million in 1992 which represents a decrease of 6.4%.

UNE had the highest other funds income of the three network universities in 1990 and in 1992. UWS and CSU significantly increased their other funds between 1990 and 1992, however, UNE's other funds decreased. CSU had the largest increase from $22.0 million in 1990 to $29.5 million in 1992 which represents an increase of 34.1% while UWS increased from $33.8 million in 1989 to $42.8 million which represents an increase of 26.7%. UNE decreased from $55.4 million in 1990 to $49.8 million in 1992 which represents a decrease of 10.1%.

The additional analysis indicates that both CSU and UWS significantly increased their other funds between 1989 and 1992. CSU increased from $19.6 million in 1989 to $29.5 million in 1992 which represents an increase of 50.5% while UWS increased from $31.9 million in 1989 to $42.8 million in 1992 which represents an increase of 34.2%.

7.4.5.1.3 Government Versus Non-Government Income

UWS had the highest proportion of government funds of the three network universities in 1990 and in 1992. UNE and CSU increased their proportion of government funds between 1990 and 1992 while UWS decreased its proportion. UNE had the largest increase from 73% in 1990 to 78% in 1992 which represents an increase of 5% while CSU increased from 75% in 1990 to 76% in 1992 which represents an increase of 1%. UWS decreased from 87% in 1990 to 83% million in 1992 which
represents a decrease of 4%.

The additional analysis indicates that UWS decreased its proportion of government funds between 1989 and 1992 while CSU's proportion remained the same. UWS decreased from 84% in 1989 to 83% in 1992 which represents a decrease of 1% while CSU remained at 76% in 1989 and in 1992.

In terms of Commonwealth compared with State Government funding, UWS had the highest proportion of Commonwealth funds of the three network universities in 1990 while UNE had the highest proportion in 1992. UNE and CSU increased their proportion of Commonwealth funds between 1990 and 1992 while UWS decreased its proportion. UNE had the largest increase from 70% in 1990 to 75% in 1992 which represents an increase of 5% while CSU increased from 70% in 1990 to 72% in 1992 which represents an increase of 2%. UWS decreased from 74% in 1990 to 73% in 1992 which represents a decrease of 1%.

The additional analysis indicates that UWS increased its proportion of Commonwealth funds between 1989 and 1992 while CSU's proportion remained the same. UWS increased from 71% in 1989 to 73% in 1992 which represents an increase of 2% while CSU remained at 72% in 1989 and in 1992.

UWS had the highest proportion of State funds of the three network universities in 1990 and in 1992. UWS and CSU decreased their proportion of State funds between 1990 and 1992 while UNE remained stable. UWS had the largest decrease from 13% in 1990 to 10% in 1992 which represents a decrease of 3% while CSU decreased from 5% in 1990 to 4% in 1992 which represents a decrease of 1%. UNE remained at 3% in 1990 and in 1992.

The additional analysis indicates that UWS decreased its proportion of State funds between 1989 and 1992 while CSU's proportion remained the same. UWS decreased from 13% in 1989 to 10% in 1992 which represents a decrease of 3% while CSU remained at 4% in 1989 and in 1992.

In terms of non-government funds, UNE had the highest proportion of non-government funds of the three network universities in 1990 while CSU had the highest proportion in 1992. UWS increased its proportion of non-government funds between 1990 and 1992 while UNE and CSU decreased their proportion. UWS increased from 13% in 1990 to 17% in 1992 which represents an increase of 4%. UNE decreased from 27% in 1990 to 22% in 1992 which represents a decrease of 5% while CSU decreased from 25% in 1990 to 24% in 1992 which represents a decrease of 1%.

The additional analysis indicates that UWS increased its proportion of non-government funds between 1989 and 1992 while CSU's proportion remained the same. UWS increased from 16% in 1989 to 17% in 1992 which represents an increase of 1% while CSU remained at 24% in 1989 and in 1992.
7.4.5.1.4 Conclusion

All three network universities significantly increased their income between 1990 and 1992. CSU had the largest increase followed by UWS and then UNE. However, the network universities' income did not grow as fast as the industry norm. UNE had the highest income of the three network universities in 1990 and in 1992.

In terms of type of income source, UWS had the largest increases in recurrent funds and HECS funds of the three network universities between 1989 and 1992; while CSU had the largest increases in capital funds and other funds.

UWS had the highest proportion of government funds of the three network universities in 1990 and in 1992. UNE and CSU increased their proportion of government funds between 1990 and 1992 while UWS decreased its proportion. UNE had the highest proportion of non-government funds of the three network universities in 1990 while CSU had the highest proportion in 1992. UWS increased its proportion of non-government funds between 1990 and 1992 while UNE and CSU decreased their proportion.

7.4.5.2 Type of Expenditure

7.4.5.2.1 Overview

The type of expenditure analysis is particularly important in terms of indicating how institutions use their income. A university's main expenditure is on staff salaries and related salary costs. Its core business is teaching, research and scholarship which is performed by its staff. Non-staff expenditure refers to non-salary activities. An increasing proportion of expenditure on staff reflects an increasing commitment to the institution's core business.

The analysis compares the aggregated network university institutions from 1989 to 1992. Unfortunately, data was not available for any of the network universities in 1988.

The University of New England had the highest expenditure of the three network universities in 1989 and in 1992. All three network universities significantly increased their expenditure between 1989 and 1992. UWS had the largest increase from $71.9 million in 1989 to $138.6 million in 1992 which represents an increase of 92.8%; CSU increased from $54.2 million in 1989 to $82.1 million in 1992 which represents an increase of 51.5%; while UNE increased from $92.8 million to $139.9 million which represents an increase of 50.8%.

These increases are indicative of the Australia-wide trend. In 1989, the average expenditure for all Australian higher education institutions was $50.3 million. In 1991, the average expenditure was $108.1 million. This represents an increase of 114.9%. Therefore, while the three network
universities' expenditure increased significantly between 1989 and 1992, the industry norm also increased significantly.

In terms of sector wide comparisons, in 1989 all three network universities would have had a higher expenditure than the industry norm. UNE and UWS would have had significantly higher expenditures than the norm. However, of the network university institutions, only the former UNE had a higher expenditure than the industry norm. In 1991, both UWS and UNE had higher expenditures than the industry norm while CSU had a lower expenditure than the norm.

7.4.5.2.2 Staff Salaries Versus Non-Staff Expenditure

The University of New England had the highest expenditure on staff of the three network universities in 1989, however, UWS had the highest expenditure in 1992. All three network universities significantly increased their expenditure on staff between 1989 and 1992. UWS had the largest increase from $50.0 million in 1989 to $87.8 million in 1992 which represents an increase of 75.6%; UNE increased from $67.0 million in 1989 to $99.3 million in 1992 which represents an increase of 48.2%; while CSU increased from $39.8 million to $56.4 million which represents an increase of 41.7%.

These increases are indicative of the Australia-wide trend. In 1989, the average expenditure on staff for all Australian higher education institutions was $36.5 million. In 1991, the average expenditure on staff was $75.9 million. This represents an increase of 107.9%. Therefore, while the three network universities' expenditure on staff increased significantly between 1989 and 1992, the industry norm also increased significantly.

The University of New England had the highest non-staff expenditure of the three network universities in 1989 and in 1992. All three network universities significantly increased their non-staff expenditure between 1989 and 1992. UWS had the largest increase from $21.9 million in 1989 to $50.8 million in 1992 which represents an increase of 131.9%; CSU increased from $13.9 million in 1989 to $25.7 million in 1992 which represents an increase of 84.9%; while UNE increased from $30.6 million to $40.6 million which represents an increase of 32.7%.

These increases are indicative of the Australia-wide trend. In 1989, the average non-staff expenditure for all Australian higher education institutions was $14.5 million. In 1991, the average non-staff expenditure was $35.2 million. This represents an increase of 142.8%. Therefore, while the three network universities' non-staff expenditure increased significantly between 1989 and 1992, the industry norm also increased significantly.

In terms of its proportion of total expenditure, Charles Sturt University spent the highest proportion of funds on staff of the three network universities in 1989, however, UNE had the highest proportion in
1992, UNE increased its proportion of staff expenditure between 1989 and 1992 while CSU and UWS decreased their proportion of staff expenditure. UNE increased from 69% in 1989 to 71% in 1992 which represents an increase of 2%. UWS decreased from 70% in 1989 to 63% in 1992 which represents a decrease of 7%; while CSU decreased from 74% in 1989 to 69% in 1992 which represents a decrease of 5%.

In terms of its proportion of total expenditure, the University of New England spent the highest proportion of funds on non-staff items of the three network universities in 1989, however, UWS had the highest proportion in 1992. UWS increased its proportion of non-staff expenditure from 30% in 1989 to 37% in 1992 which represents an increase of 7%; CSU increased its proportion of non-staff expenditure from 26% in 1989 to 31% in 1992 which represents an increase of 5%; UNE decreased its proportion of non-staff expenditure from 31% in 1989 to 29% in 1992 which represents a decrease of 2%.

### 7.4.5.2.3 Expenditure on Academic Staff

The University of New England had the highest expenditure on academic staff of the three network universities in 1989 and in 1992. All three network universities significantly increased their expenditure on academic staff between 1989 and 1992. UWS had the largest increase from $27.7 million in 1989 to $50.5 million in 1992 which represents an increase of 82.3%; UNE increased from $36.1 million in 1989 to $55.9 million in 1992 which represents an increase of 54.8%; while CSU increased from $22.7 million to $30.0 million which represents an increase of 32.2%.

These increases are indicative of the Australia-wide trend. In 1989, the average expenditure on academic staff for all Australian higher education institutions was $20.1 million. In 1991, the average expenditure on academic staff was $42.1 million. This represents an increase of 109.5%. Therefore, while the three network universities' expenditure on academic staff increased significantly between 1989 and 1992, the industry norm also increased significantly.

### 7.4.5.2.4 Expenditure on Non-Academic Staff

The University of New England had the highest expenditure on non-academic staff of the three network universities in 1989 and in 1992. All three network universities significantly increased their expenditure on non-academic staff between 1989 and 1992. UNE had the largest increase from $30.9 million in 1989 to $52.6 million in 1992 which represents an increase of 70.2%; UWS increased from $22.4 million in 1989 to $37.3 million in 1992 which represents an increase of 66.5%; while CSU increased from $17.3 million to $26.6 million which represents an increase of 53.8%.

These increases are indicative of the Australia-wide trend. In 1989, the average expenditure on non-
academic staff for all Australian higher education institutions was $16.2 million. In 1991, the average expenditure on non-academic staff was $33.9 million. This represents an increase of 109.3%. Therefore, while the three network universities' expenditure on academic staff increased significantly between 1989 and 1992, the industry norm also increased significantly.

7.4.5.2.5 Total Expenditure By Type of Activity

The University of New England had the highest expenditure on academic activities of the three network universities in 1989 and in 1992. All three network universities significantly increased their expenditure on academic activities between 1989 and 1992. UWS had the largest increase from $35.7 million in 1989 to $72.3 million in 1992 which represents an increase of 102.5%; UNE increased from $50.2 million in 1989 to $76.2 million in 1992 which represents an increase of 51.8%; while CSU increased from $26.5 million to $35.7 million which represents an increase of 34.7%.

These increases are indicative of the Australia-wide trend. In 1989, the average expenditure academic activities for all Australian higher education institutions was $28.7 million. In 1991, the average expenditure on academic activities was $53.9 million. This represents an increase of 87.8%. Therefore, while the three network universities' expenditure on academic activities increased significantly between 1989 and 1992, the industry norm also increased significantly.

The University of New England had the highest expenditure on academic support activities of the three network universities in 1989 and in 1992. All three network universities significantly increased their expenditure on academic support activities between 1989 and 1992. UNE had the largest increase from $10.2 million in 1989 to $16.8 million in 1992 which represents an increase of 64.7%; CSU increased from $8.3 million in 1989 to $13.2 million in 1992 which represents an increase of 51.8%; while UWS increased from $9.2 million to $11.9 million which represents an increase of 29.3%.

These increases are indicative of the Australia-wide trend. In 1989, the average expenditure academic support activities for all Australian higher education institutions was $4.9 million. In 1991, the average expenditure on academic support activities was $10.6 million. This represents an increase of 116.3%. Therefore, while the three network universities' expenditure on academic support activities increased significantly between 1989 and 1992, the industry norm also increased significantly.

The University of New England had the highest expenditure on other higher education purposes of the three network universities in 1989, however, UWS had the highest expenditure in 1992. All three network universities significantly increased their expenditure on other higher education purposes between 1989 and 1992. UWS had the largest increase from $26.8 million in 1989 to $54.4 million in 1992 which represents an increase of 102.9%; CSU increased from $19.0 million to $33.1 million which represents an increase of 74.0%; while UNE increased from $32.4 million in 1989 to $46.8 million in 1992 which represents an increase of 44.4%.
These increases are indicative of the Australia-wide trend. In 1989, the average expenditure on other higher education purposes for all Australian higher education institutions was $12.5 million. In 1991, the average expenditure on other higher education purposes was $28.3 million. This represents an increase of 126.4%. Therefore, while the three network universities' expenditure on other higher education purposes increased significantly between 1989 and 1992, the industry norm also increased significantly.

The University of New England had the highest expenditure on research of the three network universities in 1989 and in 1992. All three network universities increased their expenditure on research between 1989 and 1992. UNE had the largest increase from $0.0 million in 1989 to $16.2 million in 1992; CSU increased from $0.4 million to $0.8 million which represents an increase of 100.0%; while UWS increased from $0.2 million in 1989 to $2.3 million in 1991 which represents an increase of 1,005%.

These increases are indicative of the Australia-wide trend. In 1989, the average expenditure on research for all Australian higher education institutions was $3.8 million. In 1991, the average expenditure on research was $12.9 million. This represents an increase of 239%. Therefore, while the three network universities' expenditure on research increased between 1989 and 1992, the industry norm increased significantly.

An additional analysis was carried out which considered the proportion of expenditure on different activities as a proportion of the institution's total expenditure. Tables 17a to 17e analyse the type of expenditure (eg. expenditure on academic staff) by activity type (eg. academic activities). The percentages represent the proportion of expenditure on the activity type as a proportion of the institution's total expenditure on that activity type. This analysis provides further insights into each network university's expenditure patterns. The key highlights of the findings were:

**University of Western Sydney**

- UWS decreased its expenditure on academic staff academic activities from 76% in 1989 to 65% in 1992 which represents a decrease of 11%.
- UWS increased its expenditure on non-academic staff academic activities from 12% in 1989 to 17% in 1992 which represents an increase of 5%.
- UWS decreased its expenditure on non-academic staff other higher education purposes from 51% in 1989 to 37% in 1992 which represents a decrease of 14%.
- UWS decreased its expenditure on all staff academic activities from 88% in 1989 to 81% in 1992 which represents a decrease of 7%.
- UWS decreased its expenditure on all staff other higher education purposes from 52% in 1989 to 43% in 1992 which represents a decrease of 9%.
- UWS increased its non-staff expenditure on academic activities from 12% in 1989 to 19% in
1992 which represents an increase of 7%.

* UWS increased its non-staff expenditure on other higher education purposes from 48% in 1989 to 57% in 1992 which represents an increase of 9%.

In conclusion, UWS's expenditure by activity type as a proportion of total expenditure remained reasonably stable between 1989 and 1992. Its expenditure on academic activities increased by 2% from 50% in 1989 to 52% in 1992; its expenditure on other higher education purposes also increased by 2% from 37% in 1989 to 39% in 1992; while its expenditure on academic support activities decreased by 4% from 13% in 1989 to 9% in 1992.

**Charles Sturt University**

* CSU's expenditure on academic staff by activity type remained fairly stable between 1989 and 1992.
* CSU decreased its expenditure on non-academic staff academic support services from 59% in 1989 to 53% in 1992 which represents a decrease of 6%.
* CSU decreased its expenditure on non-academic staff other higher education purposes from 56% in 1989 to 51% in 1992 which represents a decrease of 5%.
* CSU decreased its expenditure on all staff academic support services from 63% in 1989 to 58% in 1992 which represents a decrease of 5%.
* CSU decreased its expenditure on all staff other higher education purposes from 59% in 1989 to 43% in 1992 which represents a decrease of 9%.
* CSU's non-staff expenditure by activity type remained reasonably stable between 1989 and 1992 with each activity type increasing by 3 or 4%.

In conclusion, the main change in CSU's expenditure by activity type as a proportion of total expenditure between 1989 and 1992 was a decrease in expenditure on academic activities and an increase on expenditure other higher education purposes. Its expenditure on academic activities decreased by 6% from 49% in 1989 to 43% in 1992; its expenditure on other higher education purposes increased by 5% from 35% in 1989 to 40% in 1992; while its expenditure on academic support activities increased by 1% from 15% in 1989 to 16% in 1992.

**The University of New England**

* UNE's expenditure on academic staff by activity type remained fairly stable between 1989 and 1992. The only significant change being a decrease of 4% in expenditure on academic activities from 71% in 1989 to 67% in 1992.
UNE increased its expenditure on non-academic staff academic activities from 14% in 1989 to 18% in 1992 which represents an increase of 4%.

UNE decreased its expenditure on non-academic staff academic support services from 71% in 1989 to 58% in 1992 which represents a decrease of 13%.

UNE decreased its expenditure on all staff academic support services from 73% in 1989 to 60% in 1992 which represents a decrease of 13%.

UNE decreased its expenditure on non-staff expenditure on other higher education purposes from 55% in 1989 to 47% in 1992 which represents a decrease of 8%.

In conclusion, the main change in UNE's expenditure by activity type as a proportion of total expenditure between 1989 and 1992 was decreases in expenditure on academic activities and on other higher education purposes with an increase in research expenditure. Its expenditure on academic activities decreased by 5% from 54% in 1989 to 49% in 1992; its expenditure on other higher education purposes decreased by 5% from 35% in 1989 to 30% in 1992; while its expenditure on research increased by 10% from 0% in 1989 to 10% in 1992.

### 7.4.6 Financial Performance Ratios

Financial performance ratios are a way to assess a higher education institution's efficiency because they provide a more meaningful measure of the institutions' cost-effectiveness. The analysis which follows uses the findings of the student data analysis to measure the network universities' efficiency in terms of their financial profile.

#### 7.4.6.1 Expenditure Per EFTSU Ratio

The ratio of expenditure per EFTSU is a way to assess a higher education institution's efficiency because it measures how much the institution spends on each student. This measures the efficiency of the institution in terms of how much it spends on each student. Decreasing expenditure per EFTSU indicates more efficient use of funds.

The University of New England had the highest expenditure per EFTSU ratio of the three network universities in 1989 and in 1992. All three network universities increased their expenditure per EFTSU ratio between 1989 and 1992. UWS had the largest increase from $7,740 per EFTSU in 1989 to $9,390 in 1992 which represents an increase of 21.3%; CSU increased from $6,800 to $8,190 which represents an increase of 20.4%; while UNE increased from $8,930 in 1989 to $10,510 in 1992 which represents an increase of 17.7%.
These increases are indicative of the Australia-wide trend. In 1989, the average expenditure per EFTSU for all Australian higher education institutions was $9,904. In 1991, the average expenditure per EFTSU was $10,973. This represents an increase of 10.8%. Therefore, while the three network universities' expenditure per EFTSU increased between 1989 and 1992, the industry norm also increased.

In terms of staff compared with non-staff expenditure per EFTSU, UNE had the highest expenditure on staff per EFTSU ratio of the three network universities in 1989 and in 1992. All three network universities increased their expenditure on staff per EFTSU ratio between 1989 and 1992. UNE had the largest increase from $6,450 per EFTSU in 1989 to $7,460 in 1992 which represents an increase of 15.7%; CSU increased from $5,000 in 1989 to $5,620 in 1992 which represents an increase of 12.4%; while UWS increased from $5,380 to $5,950 which represents an increase of 10.6%.

These increases are indicative of the Australia-wide trend. In 1989, the average expenditure on staff per EFTSU for all Australian higher education institutions was $7,188. In 1991, the average expenditure on staff per EFTSU was $7,710. This represents an increase of 7.3%. Therefore, while the three network universities' expenditure per EFTSU on staff increased between 1989 and 1992, the industry norm also increased.

UWS had the highest non-staff expenditure per EFTSU ratio of the three network universities in 1989 and in 1992. All three network universities increased their non-staff expenditure per EFTSU ratio between 1989 and 1992. UWS had the largest increase from $2,360 in 1989 to $3,440 in 1992 which represents an increase of 45.8%; CSU increased from $1,760 in 1989 to $2,560 in 1992 which represents an increase of 45.5%; while UNE increased from $2,940 per EFTSU in 1989 to $3,050 in 1992 which represents an increase of 3.7%.

These increases are indicative of the Australia-wide trend. In 1989, the average non-staff expenditure per EFTSU for all Australian higher education institutions was $2,853. In 1991, the average non-staff expenditure per EFTSU was $3,573. This represents an increase of 25.2%. Therefore, while the three network universities' non-staff expenditure on staff per EFTSU increased significantly between 1989 and 1992, the industry norm increased.

The next analysis considered the network universities' expenditure per EFTSU by type of expenditure and type of activity.

UNE had the highest expenditure on academic staff per EFTSU ratio of the three network universities in 1989 and in 1992. All three network universities increased their expenditure on academic staff per EFTSU ratio between 1989 and 1992. UNE had the largest increase from $3,470 per EFTSU in 1989 to $4,200 in 1992 which represents an increase of 21.0%; UWS increased from $2,970 in 1989 to $3,420 in 1992 which represents an increase of 15.2%; while CSU increased from $2,850 to $2,990 which represents an increase of 4.9%.
These increases are indicative of the Australia-wide trend. In 1989, the average expenditure on academic staff per EFTSU for all Australian higher education institutions was $3,955. In 1991, the average expenditure on academic staff per EFTSU was $4,269. This represents an increase of 7.9%. Therefore, while the three network universities' expenditure on academic staff per EFTSU increased between 1989 and 1992, the industry norm also increased.

UNE had the highest expenditure on non-academic staff per EFTSU ratio of the three network universities in 1989 and in 1992. All three network universities increased their expenditure on non-academic staff per EFTSU ratio between 1989 and 1992. UNE had the largest increase from $2,970 per EFTSU in 1989 to $3,950 in 1992 which represents an increase of 32.9%; CSU increased from $2,170 in 1989 to $2,650 in 1992 which represents an increase of 22.1%; while UWS increased from $2,410 to $2,530 which represents an increase of 4.9%.

These increases are indicative of the Australia-wide trend. In 1989, the average expenditure on non-academic staff per EFTSU for all Australian higher education institutions was $3,197. In 1991, the average expenditure on non-academic staff per EFTSU was $3,441. This represents an increase of 7.6%. Therefore, while the three network universities' expenditure on non-academic staff per EFTSU increased between 1989 and 1992, the industry norm also increased.

UNE had the highest expenditure on all staff per EFTSU ratio of the three network universities in 1989 and in 1992. All three network universities increased their expenditure on all staff per EFTSU ratio between 1989 and 1992. UNE had the largest increase from $6,450 per EFTSU in 1989 to $8,150 in 1992 which represents an increase of 26.4%; CSU increased from $5,020 in 1989 to $5,650 in 1992 which represents an increase of 12.5%; while UWS increased from $5,380 to $5,950 which represents an increase of 10.6%.

These increases are indicative of the Australia-wide trend. In 1989, the average expenditure on all staff per EFTSU for all Australian higher education institutions was $7,188. In 1991, the average expenditure on all staff per EFTSU was $7,710. This represents an increase of 7.3%. Therefore, while the three network universities' expenditure on all staff per EFTSU increased between 1989 and 1992, the industry norm also increased.

In terms of total expenditure per EFTSU by type of activity, UNE had the highest expenditure on academic activities per EFTSU ratio of the three network universities in 1989 and in 1992. All three network universities increased their expenditure on academic activities per EFTSU ratio between 1989 and 1992. UWS had the largest increase from $3,850 in 1989 to $4,900 in 1992 which represents an increase of 27.3%; UNE increased from $4,830 per EFTSU in 1989 to $5,720 in 1992 which represents an increase of 18.4%; while CSU increased from $3,330 to $3,560 which represents an increase of 6.9%.
These increases are not indicative of the Australia-wide trend. In 1989, the average expenditure on academic activities per EFTSU for all Australian higher education institutions was $5,647. In 1991, the average expenditure on academic activities per EFTSU was $5,476. This represents a decrease of 3.0%. Therefore, while the three network universities' expenditure on academic activities per EFTSU increased between 1989 and 1992, the industry norm decreased.

CSU had the highest expenditure on academic support services per EFTSU ratio of the three network universities in 1989 and in 1992. CSU and UNE increased their expenditure on academic support services per EFTSU ratio between 1989 and 1992 while UWS decreased its ratio. UNE had the largest increase from $980 per EFTSU in 1989 to $1,260 in 1992 which represents an increase of 28.6%; CSU increased from $1,040 in 1989 to $1,320 in 1992 which represents an increase of 26.9%; while UWS decreased from $990 to $810 which represents a decrease of 22.2%.

These increases are indicative of the Australia-wide trend. In 1989, the average expenditure on academic support services per EFTSU for all Australian higher education institutions was $976. In 1991, the average expenditure on academic support services per EFTSU was $1,075. This represents an increase of 10.1%. Therefore, while the three network universities' expenditure on academic support services increased between 1989 and 1992, the industry norm also increased.

UNE had the highest expenditure on other higher education purposes per EFTSU ratio of the three network universities in 1989, however, UWS had the highest ratio in 1992. All three network universities increased their expenditure on other higher education purposes per EFTSU ratio between 1989 and 1992. CSU had the largest increase from $2,390 in 1989 to $3,300 in 1992 which represents an increase of 38.1%; UWS had the largest increase from $2,880 per EFTSU in 1989 to $3,680 in 1992 which represents an increase of 27.8%; while UNE increased from $3,110 to $3,510 which represents an increase of 12.9%.

These increases are indicative of the Australia-wide trend. In 1989, the average expenditure on other higher education purposes per EFTSU for all Australian higher education institutions was $2,455. In 1991, the average expenditure on other higher education purposes per EFTSU was $2,868. This represents an increase of 16.8%. Therefore, while the three network universities' expenditure on other higher education purposes increased between 1989 and 1992, the industry norm also increased.

UNE had the highest expenditure on total recurrent funds per EFTSU ratio of the three network universities in 1989 and in 1992. All three network universities increased their expenditure on total recurrent funds per EFTSU ratio between 1989 and 1992. UWS had the largest increase from $7,710 in 1989 to $9,390 in 1992 which represents an increase of 21.8%; CSU increased from $6,760 per EFTSU in 1989 to $8,180 in 1992 which represents an increase of 21.0%; while UNE increased from $8,930 to $10,510 which represents an increase of 17.7%.
These increases are indicative of the Australia-wide trend. In 1989, the average expenditure on total recurrent funds per EFTSU for all Australian higher education institutions was $9,151. In 1991, the average expenditure on total recurrent funds per EFTSU was $9,659. This represents an increase of 5.6%. Therefore, while the three network universities' expenditure on total recurrent funds increased between 1989 and 1992, the industry norm also increased.

7.4.6.2 Ratio of Expenditure to Completions

The ratio of expenditure to completions is a way to assess a higher education institution's efficiency because they measure how much it costs an institution to graduate each student. This measures the efficiency of the institution in terms of how well it uses its funds to achieve its fundamental output: graduates. Decreasing expenditure per completion indicates more efficient use of funds.

In terms of total expenditure, UWS had the highest expenditure per completion ratio of the three network universities in 1989 and in 1992. All three network universities increased their total expenditure per completion ratio between 1989 and 1992. UNE had the largest increase from $30,560 per completion in 1989 to $38,310 in 1992 which represents an increase of 25.4%; CSU increased from $23,670 per completion to $25,800 which represents an increase of 8.9%; while UWS increased from $36,340 in 1989 to $39,260 in 1992 which represents an increase of 8.0%.

These increases are indicative of the Australia-wide trend. In 1989, the average total expenditure per completion for all Australian higher education institutions was $38,324. In 1991, the average total expenditure per completion was $43,224. This represents an increase of 12.8%. Therefore, while the three network universities' total expenditure per completion increased between 1989 and 1992, the industry norm also increased.

In terms of total expenditure by type of activity, UWS had the highest expenditure on academic activities per completion ratio of the three network universities in 1989 and in 1992. UNE and UWS increased their expenditure on academic activities per completion ratio between 1989 and 1992 while CSU decreased its ratio. UNE had the largest increase from $16,540 per completion in 1989 to $18,680 in 1992 which represents an increase of 12.9%; while UWS increased from $18,060 per completion in 1989 to $20,470 in 1992 which represents an increase of 13.3%. However, CSU decreased from $11,590 per completion to $11,110 which represents a decrease of 4.4%.

UNE and UWS's increases are not indicative of the Australia-wide trend. In 1989, the average expenditure on academic activities per completion for all Australian higher education institutions was $21,851. In 1991, the average expenditure on academic activities per completion was $21,571. This represents a decrease of 1.3%. Therefore, while two of the network universities' expenditure on academic activities per completion increased between 1989 and 1992, the industry norm decreased.
UWS had the highest expenditure on academic support services per completion ratio of the three network universities in 1989, however, UNE and CSU had the equal highest ratio in 1992. UNE and CSU increased their expenditure on academic support services per completion ratio between 1989 and 1992 while UWS decreased its ratio. UNE had the largest increase from $3,360 per completion in 1989 to $4,120 in 1992 which represents an increase of 22.6%; while CSU increased from $3,620 per completion to $4,120 which represents an increase of 13.8%. However, UWS decreased from $4,640 in 1989 to $3,390 in 1992 which represents a decrease of 26.9%.

CSU and UNE's increases are indicative of the Australia-wide trend. In 1989, the average expenditure on academic support services per completion for all Australian higher education institutions was $3,776. In 1991, the average expenditure on academic support services per completion was $4,236. This represents an increase of 12.2%. Therefore, while two of the network universities' expenditure on academic support services per completion increased between 1989 and 1992, the industry norm also increased.

UWS had the highest expenditure on other higher education purposes per completion ratio of the three network universities in 1989 and in 1992. All three network universities increased their total expenditure per completion ratio between 1989 and 1992. CSU had the largest increase from $8,300 per completion to $10,310 which represents an increase of 24.2%; UWS increased from $13,520 per completion in 1989 to $15,400 in 1992 which represents an increase of 13.9%; while UNE increased from $10,650 in 1989 to $11,470 in 1992 which represents an increase of 7.7%.

These increases are indicative of the Australia-wide trend. In 1989, the average expenditure on other higher education purposes per completion for all Australian higher education institutions was $9,499. In 1991, the average expenditure on other higher education purposes per completion was $11,299. This represents an increase of 18.9%. Therefore, while the three network universities' expenditure on other higher education purposes per completion increased between 1989 and 1992, the industry norm also increased.

UWS had the highest expenditure on total recurrent funds per completion ratio of the three network universities in 1989 and in 1992. All three network universities increased their expenditure on total recurrent funds per completion ratio between 1989 and 1992. UNE had the largest increase from $30,560 per completion in 1989 to $34,340 in 1992 which represents an increase of 12.4%; CSU increased from $23,510 per completion in 1989 to $25,530 in 1992 which represents an increase of 8.6%; while UWS increased from $36,220 in 1989 to $39,260 in 1992 which represents an increase of 8.4%.

These increases are indicative of the Australia-wide trend. In 1989, the average expenditure on total recurrent funds per completion for all Australian higher education institutions was $35,411. In 1991, the average expenditure on total recurrent funds per completion was $38,046. This represents an increase of 7.4%. Therefore, while the three network universities' expenditure on total recurrent funds
per completion increased between 1989 and 1992, the industry norm also increased.

CSU had the highest expenditure on research per completion ratio of the three network universities in 1989, however, UNE had the highest ratio in 1992. All three network universities increased their expenditure on research per completion ratio between 1989 and 1992. UNE had the largest increase from $0 per completion in 1989 to $3,970 in 1992; UWS increased from $120 in 1989 to $780 in 1991 which represents an increase of 550%; while CSU increased from $150 per completion in 1989 to $260 in 1992 which represents an increase of 73.3%.

These increases are indicative of the Australia-wide trend. In 1989, the average expenditure on research per completion for all Australian higher education institutions was $2,913. In 1991, the average expenditure on research per completion was $5,177. This represents an increase of 77.7%. Therefore, while the three network universities' expenditure on research per completion significantly increased between 1989 and 1992, the industry norm also significantly increased.

The next analysis considered the network universities' expenditure per completion by type of expenditure and type of activity.

UWS had the highest expenditure on academic staff per completion ratio of the three network universities in 1989 and in 1992. UNE and UWS increased their expenditure on academic staff per completion ratio between 1989 and 1992 while CSU decreased its ratio. UNE had the largest increase from $11,890 per completion in 1989 to $13,740 in 1992 which represents an increase of 15.6%; while UWS increased from $13,970 per completion in 1989 to $14,290 in 1991 which represents an increase of 2.3%. However, CSU decreased from $9,920 per completion in 1989 to $9,340 in 1992 which represents a decrease of 5.8%.

UNE and UWS's increases are indicative of the Australia-wide trend. In 1989, the average expenditure on academic staff per completion for all Australian higher education institutions was $15,306. In 1991, the average expenditure on academic staff per completion was $16,815. This represents an increase of 9.9%. Therefore, while two of the network universities' expenditure on academic staff per completion increased between 1989 and 1992, the industry norm also increased.

UWS had the highest expenditure on non-academic staff per completion ratio of the three network universities in 1989, however, UNE had the highest ratio in 1992. UNE and CSU increased their expenditure on non-academic staff per completion ratio between 1989 and 1992 while UWS decreased its ratio. UNE had the largest increase from $10,180 per completion in 1989 to $12,890 in 1992 which represents an increase of 26.6%; while CSU increased from $7,540 per completion in 1989 to $8,280 in 1991 which represents an increase of 9.8%. However, UWS decreased from $11,300 per completion in 1989 to $10,560 in 1992 which represents a decrease of 6.5%.

UNE and CSU's increases are indicative of the Australia-wide trend. In 1989, the average expenditure
on non-academic staff per completion for all Australian higher education institutions was $12,373. In 1991, the average expenditure on non-academic staff per completion was $13,553. This represents an increase of 9.5%. Therefore, while two of the network universities' expenditure on non-academic staff per completion increased between 1989 and 1992, the industry norm also increased.

UWS had the highest expenditure on all staff per completion ratio of the three network universities in 1989, however, UNE had the highest ratio in 1992. UNE and CSU increased their expenditure on all staff per completion ratio between 1989 and 1992 while UWS decreased its ratio. UNE had the largest increase from $22,070 per completion in 1989 to $26,630 in 1992 which represents an increase of 20.7%; while CSU increased from $17,460 per completion in 1989 to $17,620 in 1992 which represents an increase of 0.9%. However, UWS decreased from $25,260 per completion in 1989 to $24,870 in 1992 which represents a decrease of 1.5%.

UNE and CSU's increases are indicative of the Australia-wide trend. In 1989, the average expenditure on all staff per completion for all Australian higher education institutions was $27,815. In 1991, the average expenditure on all staff per completion was $30,368. This represents an increase of 9.2%. Therefore, while two of the network universities' expenditure on all staff per completion increased between 1989 and 1992, the industry norm also increased.

UWS had the highest non-staff expenditure per completion ratio of the three network universities in 1989 and in 1992. All three network universities increased their non-staff expenditure per completion ratio between 1989 and 1992. CSU had the largest increase from $6,200 in 1989 to $8,180 in 1992 which represents an increase of 31.9%; UWS increased from $11,070 per completion in 1989 to $14,400 in 1992 which represents an increase of 30.1%; while UNE increased from $10,060 per completion in 1989 to $11,680 in 1992 which represents an increase of 16.1%.

These increases are indicative of the Australia-wide trend. In 1989, the average expenditure on non-staff activities per completion for all Australian higher education institutions was $11,039. In 1991, the average expenditure on non-staff activities per completion was $14,076. This represents an increase of 27.5%. Therefore, while the three network universities' expenditure on non-staff activities per completion increased between 1989 and 1992, the industry norm also increased.

7.4.7 The Network Universities' Efficiency: Conclusions

7.4.7.1 Introduction

This research explored five different performance areas in order to assess the effectiveness of the network universities. The performance areas were:
Staffing profile.
Staff to staff ratios.
Student to staff ratios.
Income and expenditure analysis.
Finance performance ratios.

These areas assess the efficiency of higher education institutions by exploring the following issues:

Staffing profile measures the institution's main expenditure and its main resource and has implications particularly in terms of the proportion of academic compared with non-academic staff.

Staff to staff ratios further explore the institution's staffing profile and measure the institution's commitment to the different types of staff.

Student to staff ratios measure the proportion of students to each staff member. Low student to staff ratios suggest a higher commitment to students and perhaps higher quality educational processes, however, it is also less cost effective than higher student to staff ratios.

Income and expenditure analysis measures the institution's source of income and type of expenditure. Higher proportions of non-government funds suggest institutional efficiency while increasing expenditure on academic staff and academic activities suggest commitment to the institution's core business.

Finance performance indicators measure the institution's expenditure in terms of its two key performance indicators: inputs (EFTSU) and outputs (completions). Decreasing ratios in either of these two areas suggests increased institutional efficiency.

7.4.7.2 Research Findings

The three network universities increased their efficiency from 1988 to 1993 in the following performance areas:

4 their income and expenditure analysis: All three network universities significantly increased their income between 1990 and 1992. CSU had the largest increase followed by UWS and then UNE. However, the network universities' income did not grow as fast as the industry norm. In addition, UWS increased its proportion of non-government funds between 1990 and 1992. However, UNE and CSU decreased their proportion.
In terms of each network university's individual performance, the following conclusions can be drawn:

1. their staffing profile: The University of Western Sydney increased its proportion of non-academic staff compared with academic staff between 1988 and 1993, however, it still had a significantly less proportion of non-academic staff compared to the University of New England and Charles Sturt University. This suggests that UWS had a more efficient staffing profile than either UNE or CSU and a greater commitment to its core business activities.

2. their staff to staff ratios: The University of Western Sydney was the most efficient of the network universities in terms of the non-academic staff to academic staff ratio. UWS was
moving towards the industry norm while CSU and UNE were moving away from the norm.

In terms of sector-wide comparisons, UNE and CSU had significantly higher ratios of non-academic staff to academic staff than the industry norm in 1988 while the University of Western Sydney had a significantly lower ratio. In 1993, UNE and CSU were again significantly higher while UWS was still lower. In terms of comparison with the universities created by the White Paper Reforms (those established between 1987 and 1992), UNE had the highest ratio of non-academic staff to academic staff in 1993 (of 17 institutions); CSU had the 2nd highest; while UWS had the 9th highest. Indeed, UNE and CSU's ratio of non-academic staff to academic staff was higher than the group average of the older established universities and only four of these older universities had higher ratios.

their student to staff ratios: The University of New England was the most efficient of the network universities in terms of the student to all staff ratio, however, Charles Sturt University performed best of the three universities between 1988 and 1993 by having the smallest increase in its student to all staff ratio. All three were moving away from the industry norm.

In terms of sector-wide comparisons, CSU and UWS had significantly higher student to all staff ratios than the industry norm in 1988 while UNE had a slightly lower ratio. In 1993, all three were higher than the industry norm and UWS and CSU were significantly higher. In terms of comparison with the universities created by the White Paper Reforms (those established between 1987 and 1992), UNE had the 2nd lowest student to all staff ratio in 1993 (of 17 institutions); CSU had the 8th lowest; while UWS had the 13th lowest.

In terms of the student to staff ratios in the "vocationally relevant" fields of study, the University of Western Sydney had the lowest student to academic staff ratio, in terms of the Business field of study, of the three network universities in 1988. However, the University of New England had the lowest ratio in 1993. All three network universities increased their student to academic staff ratio in the Business field of study between 1988 and 1993. UWS had the largest increase followed by CSU and then UNE.

The University of Western Sydney had the lowest student to academic staff ratio, in terms of the Maths field of study, of the three network universities in 1991. However, UNE had the lowest ratio in 1993. All three network universities decreased their student to academic staff ratio in the Maths field of study between 1991 and 1993. CSU had the largest decrease followed by UNE and then UWS.

The University of Western Sydney had the lowest student to academic staff ratio, in terms of the Sciences field of study, of the three network universities in 1988 and in 1993. All three network universities decreased their student to academic staff ratio in the Sciences field of study between 1988 and 1993. UNE had the largest decrease followed by CSU and then
their income and expenditure analysis: Charles Sturt University was the most efficient of the network universities in terms of the income analysis. All three network universities significantly increased their income between 1990 and 1992. CSU had the largest increase followed by UWS and then UNE. However, the network universities' income did not grow as fast as the industry norm. UWS performed best of the network universities in terms of increasing its proportion of non-government funds between 1990 and 1992. UNE and CSU decreased their proportion of non-government funds.

The University of Western Sydney was the most efficient of the network universities in terms of the expenditure analysis. All three network universities significantly increased their expenditure between 1989 and 1992. UWS had the largest increase followed by CSU and then UNE. However, only UWS grew at a rate as fast as the industry norm. All three network universities significantly increased their expenditure on staff between 1989 and 1992. UWS had the largest increase followed by UNE and then CSU. UWS also had the largest increase in expenditure on academic activities followed by CSU and then UNE.

their finance performance indicators: Charles Sturt University was the most efficient of the network universities in terms of the finance performance indicators.

UNE had the highest expenditure per EFTSU ratio of the three network universities in 1989 and in 1992. All three network universities increased their expenditure per EFTSU ratio between 1989 and 1992. UWS had the largest increase followed by CSU and then UNE. The network universities' expenditure per EFTSU grew at a faster rate than the industry norm.

UWS had the highest expenditure per completion ratio of the three network universities in 1989 and in 1992. All three network universities increased their total expenditure per completion ratio between 1989 and 1992. UNE had the largest increase followed by CSU and then by UWS. UNE's ratio increased faster than the industry norm while CSU and UWS increased at a slower rate than the norm.

7.4.7.2 Conclusions

The network universities did not perform well between 1988 and 1993 in terms of their efficiency. The Commonwealth Government hoped that universities would improve their efficiency by increasing their inputs (EFTSU) and outputs (graduates) while also proportionately decreasing their expenditure. The fundamental objective for higher education institutions in terms of their efficiency, is to produce quality graduates at minimal cost. The network universities failed to achieve this objective. Indeed, all three
network universities increased their expenditure per EFTSU and per completion between 1988 and 1993.

The network universities did not increase their efficiency in four of the five performance areas. They were successful in attracting increased income in the period under review, however, most Australian institutions increased their income during this period. Only UWS increased its funding at a growth rate resembling the industry norm. Perhaps the most illustrative findings about the network universities' efficiency during this period was the increased proportion of non-academic staff compared with academic staff at UNE and CSU and their decreasing proportion of expenditure on academic activities. Only UWS increased its proportion of expenditure on academic activities which combined with its significantly higher proportion of academic staff compared with UNE and CSU suggests UWS had a stronger commitment to its core business.

The network universities' increased expenditure per EFTSU and per completion between 1988 and 1993 suggests that the member institutions were more inefficient as network universities than they were as separate institutions. UNE had the highest expenditure per EFTSU ratio of the three network universities in 1989 and in 1992 which suggests that it was the most costly of the three network universities. UWS had the largest increase followed by CSU and then UNE which suggests that UWS performed worst of the network universities in terms of cost-efficiency.

UWS had the highest expenditure per completion ratio of the three network universities in 1989 and in 1992 which suggests that UNE and CSU spent less to produce a graduate than UWS. UNE had the largest increase followed by CSU and then by UWS which suggests that UNE performed worst of the network universities in terms of the cost of producing graduates.

However, the conclusion that the network universities have proved to be inefficient needs to be qualified by comparisons with the Australian higher education sector as a whole. The network universities' expenditure per EFTSU grew at a faster rate between 1989 and 1992 than the industry norm which supports the proposition that they were more inefficient than the industry norm over this period. The average expenditure per EFTSU for all Australian higher education institutions increased by 10.8% between 1989 and 1992 while the network universities' expenditure per EFTSU increased by 21.3% for UWS, 20.4% for CSU and 17.7% for UNE. However, it should be noted that the network university member institutions were CAEs in 1988 and had a significantly lower expenditure ratio per EFTSU than universities. This was because universities were more expensive than CAEs. It can be argued that the network universities were simply "catching up" with normal university expenditure patterns as they made the transition from CAEs to universities. This argument is supported by the fact that the network universities' expenditure per EFTSU was still less than the industry norm in 1992.

Similar arguments exist in terms of expenditure per completion. UWS and CSU performed better than the industry norm in terms of the cost of producing graduates while UNE performed worse than the industry norm. UWS and CSU's expenditure per completion grew at a slower rate between 1989 and
1992 than the industry norm which supports the proposition that they were more efficient than the industry norm over this period. The average expenditure per completion for all Australian higher education institutions increased by 12.8% between 1989 and 1992 while the network universities' expenditure per completion increased by 25.4% for UNE, 8.9% for CSU and 8.0% for UWS. All three network universities' expenditure per completion was less than the industry norm in 1989 and in 1992. The same argument exists for the network universities in terms of expenditure per completion as exists for expenditure per EFTSU. It may be that the network universities were simply catching up to the normal university expenditure patterns as they made the transition from CAEs to universities. UWS and CSU's performance in decreasing their expenditure per completion relative to the industry trend was outstanding.

There needs to be a final qualification when comparing the performance of the network universities. Both UNE and CSU have a high proportion of external students compared with UWS. It is generally accepted that it costs less to teach and graduate external students than internal students. This is because external students do not place the same burden on teaching and other resources as students who enrol in the more traditional fashion. UWS's far higher proportion of internal students suggests that its expenditure per EFTSU and per completion should be greater than either UNE or CSU.

In terms of individual performance, Charles Sturt University performed slightly ahead of the University of Western Sydney as the most efficient network university from 1988 to 1993. However, UWS performed best if CSU's higher proportion of external students is taken into account. CSU's good performance, in terms of institutional efficiency, is largely based on its proportionately less increase in expenditure per EFTSU and per completion between 1988 and 1993. However, UWS performed well by having the smallest increase in expenditure per completion. Its increase in expenditure per EFTSU can be explained by its significantly higher proportion of internal students compared with UNE and CSU. UNE had the smallest increase in expenditure per EFTSU during the period under review but finished behind the two other network universities in terms of overall efficiency.

7.5 Network Performance From an Interorganisational Relations Perspective

7.5.1 Introduction

This research proposes that, from an Interorganisational Relations perspective, the most appropriate means of measuring the effectiveness of the network universities is to look at the reasons the universities were created and assess whether the networks have met the needs of their members.
However, in order to establish this it will be necessary to first look at some of the other approaches to organisational effectiveness.

### 7.5.2 The Goal Attainment Approach

The goal attainment approach is a common method for assessing organisational performance. The development of strategic planning has emphasised the importance of setting and achieving goals and objectives. The goal attainment approach suggests that the organisation's performance is measured against the number of goals it has achieved.

At the University of Western Sydney, in 1991 the Vice-Chancellor attempted to review the performance of the University with a paper: The University of Western Sydney: A Review. The paper focussed, amongst other things, on the efficient use of resources. In doing so, it is important to note that the Vice-Chancellor adopted a University-wide view of organisational performance. As the University's Chief Executive Officer, it was his responsibility to consider the interests of the organisation as a whole. While this study focuses on the University of Western Sydney from an Interorganisational Relations perspective and thus considers it as three previously independent organisations brought together under a legal mandate, it is important to note again that the University is one single legal entity. From this point of view, the University is allocated resources and is held accountable for the efficient use of these resources and the Vice-Chancellor's concern for efficiency and effectiveness is to be expected.

The Vice-Chancellor's approach reflects a common business approach to organisational effectiveness demonstrated by Hage's (1974) axiomatic theory of organisations. The basis of the Vice-Chancellor's argument was that the University was not using its resources in its most efficient manner because of duplicated administrative activities. The Vice-Chancellor was concerned that the funds lost through this duplication might be better used in the University's core business: teaching and research activities. A University-wide conference was held in September 1993 involving senior staff from across the University. The purpose of the conference was to review the performance of the University and to set directions for the future. The most important issue to emerge from the conference was that the federated network structure remained the critical factor in the performance and future of the University.

At Charles Sturt University, the Vice-Chancellor moved quickly to address the problem of duplicated systems. He understood that duplication would be one of the most costly and most derisive factors in the federated network structure. He did not want each network member to operate as independent institutions with similar courses and similar administrative systems. In his October 1990 paper to the Board of Governors, Professor Blake proposed academic and administrative structures which developed common faculties and an integrated administration. In his Paper to the Board of Governor's and the Board's consultant, Professor Smith, reviewing his performance in the University's first four years, Professor Blake indicated that he had "set out to reorganise the University to generate a new
synergy and to achieve sufficient economies to allow the University to continue to increase its student numbers, enhance its reputation in research, attract higher degree students, extend access to higher education and develop further its distance education activities" (pge 3).

These comments indicate that Professor Blake, like Professor Smith at UWS, was concerned that the network provided synergy. Professor Blake was satisfied that the University had made significant progress toward its goal of removing duplication and achieving synergy. In his review paper he lists several examples of the University's success including allocating $750,000 in administrative savings to the development of a Division of Library Services to accelerate library development and course and subject consolidation which reduced the number of courses from 149 to 105 and the number of subjects from 1,403 to 1,017. As with the University of Western Sydney, Charles Sturt had firm goals which they hoped to achieve as a result of achieving synergy.

The University of New England experienced similar problems as the University of Western Sydney with duplication and lack of synergy. A meeting of senior UNE executives met in Sydney on 7 June 1991 to examine key issues concerning the future direction of the University. The most urgent topic on the agenda was the future of the University in its pre-amalgamated form. The meeting decided to implement further decentralisation rather than the centralisation which occurred at CSU. Professor Smith announced a commitment to the "qualified autonomy" network structure model. Due to various factors including geography and culture, the meeting decided to aim for greater devolution to the network members in a number of academic and administrative matters. Even the strategic planning function, considered by the management literature to be a corporate responsibility even within decentralised structures, was to become more member-based within broad University-wide parameters. Professor Smith felt that the meeting had produced a positive outcome and that the objectives were to "build consensus and support for the proposed changes in direction for our University".

In August 1991, the Task Force established to consider implications of a de-amalgamation of the University of New England presented its interim report to the Board of Governors. The report focussed on the resource implications of breaking up the network. At the meeting there calls from the Academic Senate and the Northern Rivers Advisory Council to dismantle the University which led to a motion calling for a commitment to the amalgamation, which was carried 15 to 5. The Board of Governors then asked the Vice-Chancellor to work with the CEOs to identify the issues which had led to calls for de-amalgamation.

The Vice-Chancellor presented a report at the 25 March 1992 meeting of the Board of Governors. The report identified five sources of tension within the network which, importantly, focussed on problems within the network's political economy. While Professor Smith agreed there were problems of duplication and lack of synergy, his review of the failed performance of the University focussed on issues such as misunderstanding of the nature of the amalgamation, an imperfect appreciation of the implications of the legislation, a failure of the devolved responsibility model, less than satisfactory
governance processes and structures, a failure to achieve a cohesive corporate identity. He concluded that "an alarming amount of energy is being dissipated in conflict, especially between the two network members...the very real tensions which have emerged...has reached a point where we may well ask whether [the University's objectives] would not be better served under a different structure".

The University of Western Sydney was frustrated by its duplicated systems and inability to achieve synergy, Charles Sturt University was satisfied with its progress towards removing duplication and achieving synergy. While the University of New England had moved beyond concerns over duplication and synergy and, in reviewing its slide towards de-amalgamation, it focussed on problems within the network's political economy.

While it is possible to analyse the performance of each network university against their strategic plans, this would not necessarily determine how successful each university's federated network structures have been. An evaluation of the performance of the federated network structures depends upon an analysis of the interorganisational relationships within the network.

7.5.3 Organisational Success from an Interorganisational Relations Perspective

7.5.3.1 Introduction

From an interorganisational relations perspective, the effectiveness of the federated network structure may be explored by analysing the effectiveness of the interorganisational relationships within the network structure. Goal attainment issues such as unsatisfactory resource efficiency and duplicated administrative activities only touch on the crucial underlying issues surrounding the performance of federated network structures. They are important organisational issues which need to be addressed by federated network structures, however, they are products of the network's interorganisational relationships. The following section uses theoretical frameworks devised by Van De Ven (1976) and Raelin (1980) to explore the underlying issues of network performance.

Van De Ven attempted to quantify interorganisational relationships. He suggested that the end objective of organisations involved in an interorganisational relationship is the attainment of goals that are unachievable by the organisations independently. This crucial point takes us back to the fundamental philosophy of exchange theory which suggests that organisations enter into relationships with other organisations almost reluctantly because of the various costs involved in terms of lost autonomy and the resources needed to maintain the relationship. Organisations would prefer to remain independent, however, if they enter into interorganisational relationships they expect to
receive benefits and rewards from the relationship which exceed the costs of being involved. If the benefits do not outweigh the costs it is likely that the organisation will want to withdraw from the relationship.

Van De Ven explored the structural aspects of interorganisational relationships and their process dimensions and in doing so proposed an important model of interorganisational relationship effectiveness. These include five situational factors; two process dimensions; three structural dimensions and an outcome dimension. This model is used to examine the performance of the interorganisational relationships within the federated network universities.

7.5.3.1.1 Situational Factors

There are five situational factors which explain why and how interorganisational relationships develop.

a. Resource Dependence

The Federal and State governments provide almost all of the funding needed by the federated network universities to operate. Australian universities operate within conditions of resource dependency upon Government and most, if not all, experience resource scarcity. It has been demonstrated in section 5.2 that this resource dependence was an important factor in the decision of the member institutions to join their network university. The importance of resource dependency to the network universities was illustrated at the University of New England in the Interim Report of the Taskforce which reported on the implications of de-amalgamation. The Taskforce's report focussed on the resource implications of de-amalgamation. This suggests that resource dependence upon the external authority which established a network structure can have implications on the permanency of the relationship. If the interorganisational relationships within the network structure deteriorate, the strength of this resource dependency may then influence the decision whether to continue in the relationship, and try to improve relations, or end the relationship.

The member institutions understood that joining their network university would allow them to survive and grow and, in doing so, gain better access to scarce resources. Both the Government and the network member institutions would measure the performance of the network universities in terms of whether being a part of the network has a) reduced their resource dependence on Government by increasing their proportion of non-Government funds and b) increased their resources.

Each of the network member institutions still feel that they operate under conditions of resource scarcity which suggests that joining the University has not reduced their resource dependence. However, the members accept that one of the main benefits in joining their network university has been increased funding or increased size and growth. This anomaly may be explained by the widespread perception that all Australian universities operate under conditions of resource scarcity.
In terms of measuring the performance of the interorganisational relationships within the federated network structure, the network members at Charles Sturt University and the University of Western Sydney accept that they need each other in order to control their resource dependence. This is because it is understood that the network members are not yet large enough to stand alone as independent universities and need the critical mass provided by the joining together of the institutions. This feeling is stronger at Charles Sturt where, unlike the University of Western Sydney, the prospect of growth to enable independence is not likely. The resource dependence of the network members was also strong at the University of New England as illustrated by the focus on the resource implications of de-amalgamation. However, the resource dependence was not strong enough to convince the network members to continue in the relationship.

b Commitment to Problem Issue or Opportunity

The network universities' member institutions had varying commitments to their university's mission or opportunity. At the University of Western Sydney, the commitment to providing higher education opportunities in Sydney's West and South-West and in becoming a quality university (defined as the University's problem issue and opportunity respectively) was strong. UWS was fortunate in having a common geographic area and a common interest in serving Sydney's West. The three member institutions had this shared commitment before they joined the University of Western Sydney which helped foster a sense of common purpose when the institutions became one. Charles Sturt University also enjoyed a geographic mission in terms of serving rural Western NSW. Charles Sturt's network members also had a shared commitment, although not to the same degree as UWS, toward serving their region. Charles Sturt's senior management had a mission to integrate the University both academically and administratively. In his performance review report, Professor Blake acknowledged that the integration had not been without problems. A vocal minority of staff were opposed to the integration. The consolidation of academic programs had proved difficult and communication systems had been frustrating. However, the network members as a whole shared a common commitment to the University and its integration. The University of New England struggled to gain shared commitment from its network members. In his October 1991 paper on governance and corporate identity, Professor Smith urged a commitment to a "qualified autonomy governance model". He hoped to provide the network members with devolved autonomy but at the same time to asked them to contribute towards developing a coherent, effective corporate identity for the University. However, the University failed to develop any sense of unity or identity. The lack of a shared commitment was illustrated by Professor Smith's consolidated response paper for the March 1992 Board of Governors meeting when he said that "early on in the amalgamation a pervasive lack of trust [developed], especially between the two network members".

In summary, the University of Western Sydney developed a strong sense of shared commitment, largely to their mission to provide higher education opportunities for the people of West and South-West Sydney; Charles Sturt developed a pragmatic commitment to serving their region and becoming
an integrated university; the University of New England failed to develop a shared commitment from its network members.

c Awareness

There is only a low to medium degree of knowledge of the needs, problems and opportunities of the other network members within each of the network universities. Most staff have little awareness of their network colleagues and those at the middle to lower levels rarely even know their counterparts at the other network members. This problem is fuelled by the lack of integrative activities such as staff exchange, formal and informal communication networks and so on. However, there is a higher level of awareness at senior levels. Charles Sturt University has created the highest level of awareness with its efforts to become an integrated university. The University of Western Sydney has a reasonable level of awareness, however, this is largely restricted to senior staff. The University of New England had a poor level of awareness which helped fuel distrust and misconceptions between the network members.

There is a high degree of personal acquaintance amongst senior staff at each of the network universities. Professional staff often know their colleagues in neighbouring institutions. Cooperation and collaboration amongst senior staff, particularly in similar disciplines, is a university tradition. This fosters awareness amongst the network members, however, whether this activity is encouraged or discouraged will influence the level of awareness.

d Consensus

There is a low degree of agreement within each of the network universities on services and goals among the network members. At each of the network universities, the network members feel that they compete with the other network members for resources. The consensus is highest at Charles Sturt and lowest at the University of New England, however, the federated network structure's political economy ensures that there is always a struggle to gain consensus between network members.

e Domain Similarity

Each of the network universities began with a high degree of domain similarity. Their network members each had similar goals, services, staff and clients which created duplicated activities and resources and fuelled the network members' competition for resources. The potential for poor relations arising out of this domain similarity was illustrated by the network members feeling that they often pursued an initiative in order to gain a competitive advantage over the other members. Network members felt that if one member achieved something it meant that they could not achieve something else. Thus, whether in competition for resources, students or capital works, the domain similarity within the network structure was a key source of conflict.
Charles Sturt University resolved the problem of domain similarity by introducing centralised governance structures and course consolidation. Senior management removed the duplication of offering the same course at three different locations by offering one University-wide course at each of the network members. The University of Western Sydney made some progress at resolving domain similarity, however, the problem of duplicated resources has remained unresolved. The competition between the network members has fuelled further domain similarity. This was illustrated by the intense battle between the members to determine who would offer the University’s first Law course. Macarthur won the right to establish the first Law Faculty, however, both Nepean and Hawkesbury were granted approval to establish their own Law Faculty’s at some stage. The University of New England had a slightly different problem. While the network members shared the same problems of duplicated administrative and academic systems as the other network universities, the University experienced problems due to the lack of domain similarity in terms of its academic profile. UNE, Armidale had an established teaching and research profile in “traditional” university disciplines. UNE, Northern Rivers had a philosophy based upon providing innovative teaching programs. Both resented the other’s approach.

7.5.3.1.2 Process Dimensions

There are two process dimensions.

a. Intensity of Resource Flows

There is a high degree of intensity of resource flows at each of the network universities. The pursuit of resources was one of the most powerful forces within the federated network structure’s political economy. The network members sought resources from the network structure in return for being a part of the network. The strength of intensity with which they sought these resources was strongest at the University of New England and, only to a slightly lesser extent, at the University of Western Sydney. While the network members at Charles Sturt University also sought resources from the network, the competition between members for resources was not as strong as at the other two network universities. This was largely due to the nature of the political economy which was strongest at UNE and UWS.

At each of the network universities, there was a low degree of resource flows between the network members but there was a high degree of resource flows between the network members and the Office of the Vice-Chancellor. This was due to the fact that the Office of the Vice-Chancellor had responsibility for allocating resources within the network structure. This method of resource allocation was largely effective at Charles Sturt because the university had aimed to become integrated and in doing so it came to resemble a traditional university structure which typically allocates funds from the centre. However, the network member autonomy models adopted by the University of Western Sydney and the University of New England demanded that the network members had some influence
in the allocation of funds. This meant that funds were not simply allocated to the members by the centre, the network members wanted to become involved in the decision of resource allocation which intensified the resource flows within the network structure.

A concern at each of the network universities was over the cost involved in maintaining the network and, more specifically, over the information, time and other resources provided for the Office of the Vice-Chancellor which was not being sufficiently reciprocated. In other words, they felt the flow of resources was too much one way; from the network members to the Office of the Vice-Chancellor and that they expected the Office of the Vice-Chancellor to reverse this flow and return some benefits for the network members. A critical problem for the network structure at each of the network universities, and particularly at the University of New England, was the perception from network members that the Office of the Vice-Chancellor was not providing value for money. It was taking resources from the members in terms of operating costs and not delivering sufficient benefits in return.

b  Intensity of Information Flows

There is a high degree of intensity of information flows within each of the network universities. The intensity of the information flow is fuelled by the distance between the network members, particularly at Charles Sturt and the University of New England. The federated network structure is an information resource intensive structure because of the difficulty in coordinating largely separate organisations. As a result, there is a high frequency of communications among the network members and the central coordinating agency as the network struggles to gain synergy from their interorganisational relationships. The problem is worsened when there are large distances between network members because the network members need to interact but are constrained by difficulties of time and distance.

The intensity of information flows within a federated network structure result in high frequency of communication, particularly between senior staff. This causes problems in terms of time spent in meetings and in travelling to and from meetings. The UNE, Armidale and UNE, Northern Rivers campuses were four hours apart by car travel which meant a one hour meeting would cost a day. If that meeting involved twenty senior staff, the University lost the services of its senior management for at least one working day every time a meeting was required. Similar problems were experienced at both Charles Sturt and the University of Western Sydney.

The intensity of information flows and frequency of communications could be resolved by technology. Charles Sturt led the way in reducing the intensity of information flows and their influence on the network structure's interorganisational relationships by introducing video-conferencing and other technological advancements such as telephone conferencing. However, the University needed a commitment to the network and to integration before it could achieve such progress.
7.5.3.1.3 Structural Dimensions

There are three structural dimensions. The following section considers the structural dimensions of interorganisational relationships in terms of the performance of the network universities.

a  Formalisation

There is a high degree of formalisation in each of the network universities' inter-network member agreements in terms of the fact the relationships are mandated by legislation. However, there is a low degree of formalisation in terms of the contact between network members' senior staff. Senior staff do not feel constrained by rules, policies and procedures when they have contact with staff from the Office of the Vice-Chancellor or the other Members.

b  Centralisation

There is a low degree of centralisation at the University of Western Sydney and the University of New England in the sense that University-wide decisions and network member decisions are influenced by the members, and more particularly upon the respective Chief Executive Officers. However, Charles Sturt had a high degree of centralisation and reduced the decision making authority of the Chief Executive Officers and thereby reduced the level of network member autonomy.

c  Complexity

There is a reasonably low degree of complexity in each of the network universities' interorganisational relationships in terms of there being only three network members and the Office of the Vice-Chancellor. However, there is a very high degree of complexity in terms of the number of projects and tasks undertaken by each of the network universities. Universities are very complex organisations and while the complexity of the interorganisational relationships within the network structure was low, there is the potential of very complex formal and informal relationships within the network if it becomes integrated as with Charles Sturt. In this sense, complexity could aid improved interorganisational relationships because staff would develop formal and informal communication networks which, in turn, would help develop a sense of collaboration, cooperation, and a sense of shared commitment.

7.5.3.1.4 Outcome Dimensions

There is one outcome dimension.

a  Perceived Effectiveness

This research proposes that the perception of the network members is the most important dimension
in assessing the effectiveness of interorganisational relationships within a federated network structure.

7.5.3.1.5 Conclusion

In conclusion, it is perhaps necessary to note the comments of theorists who argue that structure has no relationship with performance. Dalton, Todor, Spendolini, Fielding and Porter (1980) presented a critical review of organisation structure and performance. They concluded that evaluations and generalisations concerning the nature and directions of the relationships between structure and performance are tenuous. Dalton et al suggested that many people would consider performance to be the single most important organisational dependent variable, whether in the public or private sector. However, the authors' review illustrated not only a lack of consistency but also a paucity of research in essential areas with respect to associations between structure and performance. They suggested that these problems may be due to some hesitancy to examine the "alleged" relationship between structure and performance and assert that it may be that, in practice, there is no such relationship. This is supported by a perception which emerged from this research that the achievements of the network members were not related to the federated network structure at all. There was a strong feeling, at the University of Western Sydney in particular, that the achievements of the network members should not be attributed to the network and that university status was a greater contributing factor to the collective efforts of the network members and thus the University.

7.5.4 Has the Federated Network Structure Met the Needs of the Network Members?

7.5.4.1 Introduction

The fundamental notion underlying the exchange perspective indicates that the network members would seek resources from being a part of the network and hope that the benefits would outweigh the costs in being involved. The resource-dependence perspective indicated that the network members would use power, force, coercion and other political processes in order to gain resources within the network's political economy. In reviewing the performance of the interorganisational relationships within the network universities, it is necessary to ask the following questions:

a) have the network members gained resources from being a part of the network and, more importantly, do they have more resources as part of the network than when they were independent institutions?
b) have the benefits from being a part of the network outweighed the costs?
c) has the network controlled the pursuit of funds and authority within its political economy?
7.5.4.2 Member Resource Acquisition

The network university member institutions have gained from being a part of their respective universities in terms of resource acquisition. All three network universities significantly increased their income between 1990 and 1992. UWS had the largest increase (48.7%), followed by CSU (48.5%) and then UNE (11.1%). However, the network universities' income did not grow as fast as the industry norm.

In addition, all three network universities significantly increased their expenditure between 1989 and 1992. UWS had the largest increase (92.6%), followed by CSU (51.8%) and then UNE (50.8%). However, only UWS grew at a rate as fast as the industry norm.

Therefore, while each of the network universities increased their income and expenditure between 1988 and 1993, they did not grow as fast as the industry norm. The average income for all Australian higher education institutions increased by 105.2% while the average expenditure increased by 114.9%.

7.5.4.3 Benefits Compared With Costs

It is difficult to conclude whether the benefits for the network university member institutions in joining their respective universities have outweighed the costs because each members' perception of the benefits and costs differs. However, it is clear that the members have benefited in terms of resource acquisition and the reduction of environmental uncertainty. In general terms, it is reasonable to suggest that the members have gained more than they have lost in being a part of their respective network universities.

7.5.4.4 Political Economy Management

Charles Sturt University performed best of the three network universities in managing its political economy. However, this was largely due to the nature of the centralised network model it adopted which effectively weakened the political economy and its potential to harm the network's operation. In many respects, the University of Western Sydney has performed the best by maintaining a tenuous balance of network forces while adopting a network member autonomy model which creates a very strong political economy. The University of New England failed to manage its political economy and it consequently destroyed the university's network structure.
7.6 Conclusions

The analysis provides some support for proposition 15. Charles Sturt University was the only one of the network universities which clearly removed duplicated resources or activities within its network structure. However, the research findings show that CSU did not significantly improve its performance. It certainly improved its effectiveness, as did the two other network universities, but it did not improve its efficiency. It is assumed throughout the literature that the removal of duplicated resources and activities will improve an organisation's efficiency. However, the research findings did not support this proposition. CSU did have the lowest expenditure per EFTSU of the three network universities in 1989 and in 1992, however, its ratio was only slightly less than UWS's and CSU's increase between 1989 and 1992 was similar to both UWS and UNE. Similar conclusions can be drawn for expenditure per completion. CSU's expenditure per completion was significantly less than both UNE and UWS. However, its increase in expenditure between 1989 and 1992 was slightly higher than UWS's. CSU was the most efficient of the network universities during the period under review but did not perform better than UWS if CSU's high proportion of external students is taken into account. Furthermore, UWS performed slightly better than CSU in terms of overall effectiveness. Therefore, it is reasonable to conclude that the removal of duplicated resources or activities within a federated network structure may ensure improved performance of the network. However, UWS did not remove duplication from its network structure and its performance provides support for the proposition.

The analysis provides some support for proposition 16. Certainly, the network universities improved their effectiveness, however, they did not significantly improve their efficiency. The Commonwealth Government hoped that universities would improve their efficiency by increasing their inputs (EFTSU) and outputs (graduates) while also proportionately decreasing their expenditure. The fundamental objective for higher education institutions in terms of their efficiency, is to produce quality graduates at minimal cost. The network universities failed to achieve this objective. Indeed, all three network universities increased their expenditure per EFTSU and per completion between 1988 and 1993. The network universities' increased expenditure per EFTSU and per completion between 1988 and 1993 suggests that the member institutions were more inefficient as network universities than they were as separate institutions. However, the conclusion that the network universities have proved to be inefficient needs to be qualified by comparisons with the Australian higher education sector as a whole. It can be argued that the network universities were simply "catching up" with normal university expenditure patterns as they made the transition from CAEs to universities. This argument is supported by the fact that the network universities' expenditure per EFTSU was still less than the industry norm in 1992. Similar arguments exist in terms of expenditure per completion. UWS and CSU's performance in decreasing their expenditure per completion relative to the industry trend was outstanding. While the network universities' efficiency did not increase between 1988 and 1993, they did perform well in comparison with the industry norm. The network universities certainly improved their effectiveness during the period under review. Therefore, it is reasonable to conclude that a federated network structure will improve network member performance.
CHAPTER EIGHT: CONCLUSIONS AND RECOMMENDATIONS

8.1 Introduction

This chapter presents the research's conclusions and recommendations. The conclusions are divided into two parts. The first part summarises the research findings and answers the general research problem and the four sub-problems. The second part represents the research's theoretical conclusions and summarises the research's testing of the literature. The recommendations represent the research's prescriptive conclusions. They examine the literature's prescriptive frameworks before presenting the research's prescriptive framework for improving interorganisational relationships within federated network structures. The chapter concludes with a summary of the research's implications in terms of a) further research and b) for the Australian Government and the subject institutions: the University of Western Sydney, Charles Sturt University, and the University of New England.

8.2 Conclusions

8.2.1 The Research Findings

8.2.1.1 Introduction

The research findings conclusions are divided into two sections. The first section considers the general research problem and the four sub-problems. The second section presents key highlights of the research's main findings outlined in chapters five, six and seven.

8.2.1.2 The Research Problem and Sub-Problems

The general research problem was to examine whether the interorganisational relationships within federated network structures; more specifically between the member organisations and between the members and the central coordinating agency, may be explained by the pursuit of funds (money) and authority (autonomy). The specific research questions were:

The first sub problem: was to determine the nature of the federated network structures at each of
Australia's three network universities and how they operate.

The interorganisational relationships within Australia's three federated network universities in the period from 1988 to 1993 may be explained by each network university's environmental context, historical development, operation, specific structures, and performance. Each federated network structure is defined and explained by the members' pursuit of funds and authority within the network's political economy. The principal distinguishing feature of federated network structures from other network structures is the network members' control and management over their own interorganisational activities. The degree of member control and central coordinating agency control will define the nature of the federated network structure and is largely determined by the network's mandate, or if the mandate is unclear, the members' interpretation of the mandate. The interorganisational relationships within the three network universities were dominated by the members' use of power, force, control and coercion to pursue resources and other benefits from the federated network structure.

The nature of the federated network structures at each of Australia's three federated network universities was defined by their interpretation of the mandate and the network structure. Each university's environmental context combined with its historical context to influence its interpretation of its mandate which was the legislation which created them. Each network university interpreted the mandate differently. Charles Sturt University interpreted the mandate as allowing for central control and developed a centralised network model. The University of New England began with hopes of having a balance between central control and member autonomy and developed a federative network model. The University of Western Sydney interpreted the mandate as allowing for member autonomy and developed the network member autonomy model. UNE moved towards the member autonomy model when its interorganisational relationships deteriorated. The different interpretations of the network structure were determined by the degree of control enjoyed by the members and the central coordinating agency within the network's governance structures. The network's operation and its visible and invisible network configuration were defined by the degree of control within its governance structures. The centralised network model provided the central coordinating agency with a high degree of control and the network members with a low degree of control. The federative network model provided a balance between central coordinating agency control and network member control. The network member autonomy model provided the members with a high degree of control and the central coordinating agency with a low degree of control.

The second sub problem: was to determine the nature of the interorganisational relationships within the federated network structures at each of Australia's three network universities; more specifically between the members and the central coordinating agency and between the members themselves.

The nature of the interorganisational relationships within the federated network structures at each of Australia's three network universities; more specifically between the members and the central coordinating agency and between the members themselves was defined and dominated by each
network's political economy. Members' pursuit of funds and authority caused interorganisational conflict between members at each of the federated network universities. The degree of network member autonomy and control and decision making also caused problems at each of the network universities. The University of New England had the highest level of interorganisational conflict of the three network universities. It experienced structural and operating conflict between UNE, Armidale and UNE, Northern Rivers due to an inability to establish or maintain the basic rules or principles that governed their interorganisational relationship and disagreements over their task expectations or role performance. The University of Western Sydney also experienced some structural and operating conflict between members. At both UNE and UWS, this interorganisational conflict was an unavoidable outcome of the network structure because the visible and invisible network configuration was not clearly understood and agreed by each of the network members. Charles Sturt University did not experience much structural or operating conflict between its members largely because it adopted the centralised network model which a) was easily understood by therefore removed confusion over the network configuration and b) created a very weak political economy. All three network universities experienced some degree of interorganisational conflict caused by member interdependence. This resulted from competition for resources and the tension between acting independently and interdependently. A major finding by this research was that the central coordinating agency was a source of interorganisational conflict at each of the network universities. The agency was perceived as being costly, wasteful and inefficient at each of the network universities and it did not successfully perform the role of ordering behaviour and facilitating the network's interorganisational relationships as outlined by the literature. However, it is clear that interorganisational conflict is normal organisation behaviour within federated network structures. The central coordinating agency may cause conflict in order to achieve its objectives. However, while some interorganisational conflict is to be expected, the degree of conflict between the central coordinating agency and the network members must be managed or it will become dysfunctional and harm the network's interorganisational relationships.

The third sub problem: was to review the performance of the federated network structures at each of Australia's three network universities in terms of their efficiency, effectiveness and from an interorganisational relations perspective.

The performance of the federated network structures at each of Australia's three network universities in terms of their efficiency, effectiveness and from an interorganisational relations perspective, were influenced by their interpretation of the network structure and the network's interorganisational relationships. All three network universities improved their effectiveness between 1988 and 1993. CSU's centralised network model proved to be the most effective structure, however, it was not significantly better than UWS's network member autonomy model, particularly when CSU's high proportion of external students is compared with UWS's very low proportion. The analysis allowed conclusions to be drawn on the individual performance of the network universities during the period under review. However, comparison between the three network models was inconclusive. CSU's centralised model was effective and reasonably efficient (particularly when compared with industry norms and trends), however, so was UWS's decentralised network model. UNE began with a
federative model but quickly moved towards a network member autonomy model. Therefore, it is not possible to draw conclusions on the federative model's performance. UNE's poor performance as a network member autonomy structure contradicts UWS's good performance under the same model. However, this is attributed to the dysfunctional influence of UNE's political economy. UWS's capacity to provide the autonomy desired by members combined with good performance in terms of effectiveness and efficiency suggests it to be the outstanding performer of the three universities. UNE's poor performance using the same structure simply highlights the importance of avoiding or managing the network member autonomy model's weaknesses and the dangers of a strong political economy. It also makes UWS's performance all the more meritorious given its strong political economy. While UWS has not yet achieved synergy from the network, and the problem of how to attain synergy from the network member autonomy model remains, it has still performed well in comparison with the obvious attempt at gaining synergy presented by CSU's centralised model.

The fourth sub problem: was to prescribe a future direction for improving interorganisational relationships within the federated network structures at each of Australia's three network universities.

A future direction for improving interorganisational relationships within the federated network structures at each of Australia's three network universities is prescribed later in this chapter.

This research concludes that the interorganisational relationships within federated network structures; more specifically between the member organisations and between the members and the central coordinating agency, can be explained by the pursuit of funds (money) and authority (autonomy). This conclusion is supported by the summary of the research's main findings.

8.2.1.3 Key Highlights of the Research's Main Findings

8.2.1.3.1 The Historical Context of the Network

The analysis provided support for both proposition 1 and proposition 2. The member institutions' environmental uncertainty was caused by the information provided by the White Paper and their perception of this information determined their degree of uncertainty. Small institutions faced the greatest uncertainty because the size criteria for UNS membership placed their survival in jeopardy. All of the network university institutions, with the exception of the former University of New England, were the size of those institutions facing the greatest risk to their future. Their response was to seek interorganisational relationships with other institutions in order to meet the UNS size criteria and guarantee their survival. This supports proposition 1 by suggesting that when organisations operate under conditions of environmental uncertainty, they will seek interorganisational relationships with other organisations in order to reduce this uncertainty. While the network university institutions felt compelled to seek interorganisational relationships with other institutions, they felt they had a choice
over which institution to join with. It is clear that in selecting suitable institutions to join with, each network institution wanted to retain their autonomy and identity. This was also illustrated by the strength with which institutions fought attempts to merge them with large established institutions which may have threatened their autonomy. This supports proposition 2 by suggesting organisations will seek to form that type of interorganisational relationship which involves the least cost to the organisation in loss of autonomy and power. The analysis provides some support for proposition 3. Certainly the network university institutions sought interorganisational relationships with other members in order to gain access to resources necessary for their survival and success. The members needed to form interorganisational relationships in order to meet the size criteria for membership of the UNS which, in turn, guaranteed access to necessary resources. This suggests that organisations will develop interorganisational relationships with other organisations if the relationship can provide them with access to necessary resources.

The analysis provided some support for proposition 4. Certainly the network university members had different interpretations of whether they were involved in a voluntary, mandated or partially mandated relation. The Charles Sturt University members felt they were in a mandated relation and expected the network's interorganisational relationships to provide a low degree of member autonomy, a high degree of permanence, and a reasonable necessity for mutual benefit. This influenced their behaviour within the network's interorganisational relationships because they accepted the centralised network model, relinquished member autonomy, and allowed the network's political economy to operate centrally and be controlled by the Office of the Vice-Chancellor. The University of Western Sydney members varied in their interpretation of the legislation. UWS, Hawkesbury felt it was in a mandated relation and had similar expectations as the Charles Sturt members. However, UWS, Nepean, and UWS, Macarthur in particular, felt they were in a partially mandated relation and expected the network's interorganisational relationships to provide a high degree of member autonomy, a medium degree of permanence, and a high degree of necessity for mutual benefit. This influenced their behaviour within the network's interorganisational relationships because they developed the network member autonomy model, and pursued member autonomy, funds and authority within the network's political economy. The University of New England members also varied in their interpretation of the legislation. However, their different interpretations caused more problems than at either of the two other network universities. UNE, Armidale and UNE, Orange felt they were in a partially mandated relation and expected the network's interorganisational relationships to provide a high degree of member autonomy, a medium degree of permanence, and a high degree of necessity for mutual benefit. UNE, Northern Rivers felt it was in a voluntary relation and expected a high degree of member autonomy, a low degree of permanence, and a high degree of necessity for mutual benefit. These behaviours were illustrated by the network universities' early papers interpreting the nature of the mandate and the operation of the network structure and their governance structures. This suggests that organisations' perception of whether they are in a voluntary, mandated or partially mandated relationship will influence their behaviour within an interorganisational relationship.

The analysis supported proposition 5. The uncertainty and confusion surrounding the creation of the
three network universities and the different interpretations of the network structure by members at each of the network universities suggest that they did not begin with a clear network configuration. The various papers produced by the network universities to explain the network structure suggests that they felt the need to develop their own network configuration. The proposition is further supported by each network university's different interpretations of essentially the same mandate. This suggests that if a federated network structure begins without a formally agreed upon network configuration, network members will be forced to construct their own configuration.

8.2.1.3.2 The Network in Operation

The analysis provided some support for proposition 6. It is clear that members pursue resources from the network structure. They also pursue power and control within the network's political economy. Members desire power and control because it allows them to better pursue resources from the network and it also allows them the autonomy to decide how the resources should be used. Members pursue power and control through the network's governance structures. The analysis showed that the groups or individuals who controlled the network's resources, particularly in terms of making resource allocation decisions, had the most power and control within the network's governance structure. Therefore, it is reasonable to suggest that the ability to make and administer rules regarding possession, allocation, or use of resources will be a critical source of control within a federated network.

The analysis failed to provide support for proposition 7. The central coordinating agency at each of the network universities did not perceive their primary role as facilitating relations or ordering behaviour between the network members. CSU's Office did play these roles to some extent but this was largely due to the nature of the centralised network model which required high levels of interaction between the members. UWS's Office saw its role as the major link between the network and external organisations, particularly in terms of reporting to Government. The Vice-Chancellor played a crucial role in mediating between the members at the Corporate Management Team meetings and, in this sense, he played a facilitating and mediating role. However, at both UWS and UNE, the network members' autonomy and control within the network's political economy meant that the Office of the Vice-Chancellor could not effectively play the role suggested by the literature. This suggests that the central coordinating agency within a federated network structure will not play an important role in resolving or managing interorganisational conflict.

The analysis provided support for proposition 8. It is clear that there was interorganisational conflict between the network members at each of the network universities, however, less so at CSU where the main conflict was between staff unions and the Office of the Vice-Chancellor. There was a reasonably high degree of conflict caused by interdependence at UWS and UNE. There was a high degree of structural conflict at UNE and a moderate degree at UWS. There was a high degree of operating conflict at UNE and a moderate degree at both UWS and CSU (focussed mainly at the Office of the
Vice-Chancellor). CSU’s centralised network model created a low degree of interorganisational conflict between the members because it did not allow for a strong political economy. UWS’s network member autonomy model constrained the potential for interorganisational conflict caused by its strong political economy because it satisfied members’ desire for autonomy. However, the University has still to resolve the conflict caused by the problem of how to relinquish autonomy in order to achieve synergy from the network model. UNE’s network member autonomy model created strong interorganisational conflict largely because the members could not agree on the rules that governed their relationship or the task expectation and role performance of the members. Therefore, it is reasonable to conclude that a federated network structure will result in conflict between network members.

The analysis provided partial support for proposition 9. The analysis of the interorganisational conflict at UNE in particular, suggests that member perceptions that their interorganisational relationships have cost more than they provided in benefits, caused problems within the network’s relationships. While at UWS and CSU, member perceptions that the benefits are outweighing the costs has maintained reasonably positive interorganisational relationships. Therefore, it is reasonable to suggest that cooperative interorganisational relationships within a federated network will occur when exchanges between members result in greater benefits than the costs involved in maintaining the relationship.

The analysis provided partial support for proposition 10. Certainly, a major part of the problems at the UNE were perceptions by UNE, Armidale in particular, that it had lost power and status by joining the network structure. Similarly, UNE, Northern Rivers fought to maintain its position as an equal member within the network. UWS’s members based their network model upon maintaining member power and autonomy. The University’s interorganisational conflict was most often caused by members seeking to maintain or regain power or control within the network’s political economy. However, the proposition is not supported at CSU where the members lost power and autonomy and accepted the integration of their activities under the University’s centralised network model. Therefore, it is reasonable to suggest that in federated network structures which result in the loss of power and autonomy for network members, interorganisational conflict will result between the network members.

The analysis provided support for proposition 11. Certainly the network structure does create interorganisational conflict through member interdependence and this is largely caused by members competing for similar resources. It is also clear that members perceive themselves as competing with other members for scarce resources. Therefore, it is reasonable to conclude that competition for scarce resources by network members within a federated network structure will result in interorganisational conflict.

The analysis provided some support for proposition 12. Certainly, the analysis indicates that the network members at UWS and UNE focussed their interorganisational activity on the acquisition of resources and power from the network structure. However, the members at CSU were integrated as a single institution and did not compete for resources and power as at the two other universities. This was largely because CSU’s centralised network model created a weak political economy while the
network member autonomy model at the two other universities created a very strong political economy. Therefore, it is reasonable to suggest that in a federated network structure, network members will be primarily concerned with the acquisition of funds and authority. This proposition gains more support when the network model creates a strong political economy.

The three network models had the following characteristics in terms of the network's specific structural determinants:

The centralised model: the administrative structure is controlled by the network's central coordinating agency; the network is tightly coupled; central functions located within members have multiple ties but the members are largely restricted to having ties with the centre; and the central coordinating agency has almost sole responsibility for attracting new network resources.

The federative model: the administrative structure is controlled by both the network's central coordinating agency and the network members; the network is reasonably tightly coupled; there are multiple ties between the members and the central coordinating agency and between the members themselves; and the central coordinating agency has the main responsibility for attracting new network resources.

The network member autonomy model: the administrative structure is controlled by the network members; the network is loosely coupled; there is a low multiplexity of ties between the members and the central coordinating agency and a very low multiplexity of ties between the members; and both the central coordinating agency and the members have responsibility for attracting new network resources.

The analysis provided some support for proposition 13. It is clear that each of the three federated network universities began with an organisational structure which duplicated resources and activities. CSU adopted a centralised network model which aimed to remove the network's duplication. It may be argued that the centralised model was successful in reducing the network's duplication. However, the federative and network member autonomy models adopted at UNE and UWS facilitated duplication. Therefore, it is reasonable to conclude that a federated network structure will result in duplication of resources and activities. This is truer of federative and network member autonomy models.

The analysis provided some support for proposition 14. The strongest interorganisational relationships between members amongst the network universities is at CSU while the weakest was at
UNE. UNE's network members refused to develop multiple ties and showed little commitment to maintain the relationships within the network. While CSU's members developed multiple ties, largely through the central coordinating agency (the Office of the Vice-Chancellor), as part of its centralised network model. Therefore, it is reasonable to conclude that the strength of the relationships within a federated network structure will be increased by multiple ties between network members.

8.2.1.3.3 The Network's Performance

The network universities performed well between 1988 and 1993 in terms of their effectiveness. Each network university significantly increased their fundamental inputs and outputs; attracted better quality inputs and produced better quality outputs; and increased their outputs (graduates) in "vocationally relevant" fields of study. The only performance area where their effectiveness had decreased was the graduate employment rate. However, there may be other factors which explain this (ie. the economic recession) and the network universities performed well in graduate employment rates in comparison with Australian higher education institutions as a whole.

It is reasonable to conclude that the student growth at each of the network universities has exceeded the growth which could have been achieved by the members as separate institutions. Certainly the aggregated student enrolment and completion figures in 1988 and 1989 (representing the combined input and output of the member institutions) was significantly less than the figures achieved as network universities in 1993.

Similar conclusions can be drawn in the other effectiveness performance areas. The only area where the network universities did not increase their effectiveness was the graduate employment rate and, even though they decreased in this area, they still performed well in sector-wide comparisons.

In terms of individual performance, UWS performed slightly ahead of CSU as the most effective network university from 1988 to 1993. UWS's strong performance, in terms of institutional effectiveness, is largely based on its growth in inputs and outputs. It also performed well in attracting better quality inputs, producing better quality outputs, and in producing outputs in "vocationally relevant" fields of study. CSU also performed well in these areas and increased its capacity to produce outputs in minimum time (increased proportion of full-time students). CSU also performed best of the network universities in terms of graduate employment rates. UNE performed well during the period under review but finished behind the two other network universities in terms of overall effectiveness.

The network universities did not perform well between 1988 and 1993 in terms of their efficiency. The Commonwealth Government hoped that universities would improve their efficiency by increasing their inputs (EFTSU) and outputs (graduates) while also proportionately decreasing their expenditure. The fundamental objective for higher education institutions in terms of their efficiency, is to produce quality graduates at minimal cost. The network universities failed to achieve this objective. Indeed, all three
network universities increased their expenditure per EFTSU and per completion between 1988 and 1993.

The network universities did not increase their efficiency in four of the five performance areas. They were successful in attracting increased income in the period under review, however, most Australian institutions increased their income during this period. Only UWS increased its funding at a growth rate resembling the industry norm. Perhaps the most illustrative findings about the network universities' efficiency during this period was the increased proportion of non-academic staff compared with academic staff at UNE and CSU and their decreasing proportion of expenditure on academic activities. Only UWS increased its proportion of expenditure on academic activities which combined with its significantly higher proportion of academic staff compared with UNE and CSU suggests UWS had a stronger commitment to its core business.

The network universities' increased expenditure per EFTSU and per completion between 1988 and 1993 suggests that the member institutions were more inefficient as network universities than they were as separate institutions. UNE had the highest expenditure per EFTSU ratio of the three network universities in 1989 and in 1992 which suggests that it was the most costly of the three network universities. UWS had the largest increase followed by CSU and then UNE which suggests that UWS performed worst of the network universities in terms of cost-efficiency.

UWS had the highest expenditure per completion ratio of the three network universities in 1989 and in 1992 which suggests that UNE and CSU spent less to produce a graduate than UWS. UNE had the largest increase followed by CSU and then by UWS which suggests that UNE performed worst of the network universities in terms of the cost of producing graduates.

However, the conclusion that the network universities have proved to be inefficient needs to be qualified by comparisons with the Australian higher education sector as a whole. The network universities' expenditure per EFTSU grew at a faster rate between 1989 and 1992 than the industry norm which supports the proposition that they were more inefficient than the industry norm over this period. The average expenditure per EFTSU for all Australian higher education institutions increased by 10.8% between 1989 and 1992 while the network universities' expenditure per EFTSU increased by 21.3% for UWS, 20.4% for CSU and 17.7% for UNE. However, it should be noted that the network university member institutions were CAEs in 1988 and had a significantly lower expenditure ratio per EFTSU than universities. This was because universities were more expensive than CAEs. It can be argued that the network universities were simply "catching up" with normal university expenditure patterns as they made the transition from CAEs to universities. This argument is supported by the fact that the network universities' expenditure per EFTSU was still less than the industry norm in 1992.

Similar arguments exist in terms of expenditure per completion. UWS and CSU performed better than the industry norm in terms of the cost of producing graduates while UNE performed worse than the industry norm. UWS and CSU's expenditure per completion grew at a slower rate between 1989 and
1992 than the industry norm which supports the proposition that they were more efficient than the industry norm over this period. The average expenditure per completion for all Australian higher education institutions increased by 12.8% between 1989 and 1992 while the network universities' expenditure per completion increased by 25.4% for UNE, 8.9% for CSU and 8.0% for UWS. All three network universities' expenditure per completion was less than the industry norm in 1989 and in 1992. The same argument exists for the network universities in terms of expenditure per completion as exists for expenditure per EFTSU. It may be that the network universities were simply catching up to the normal university expenditure patterns as they made the transition from CAEs to universities. UWS and CSU's performance in decreasing their expenditure per completion relative to the industry trend was outstanding.

There needs to be a final qualification when comparing the performance of the network universities. Both UNE and CSU have a high proportion of external students compared with UWS. It is generally accepted that it costs less to teach and graduate external students than internal students. This is because external students do not place the same burden on teaching and other resources as students who enrol in the more traditional fashion. UWS's far higher proportion of internal students suggests that its expenditure per EFTSU and per completion should be greater than either UNE or CSU.

In terms of individual performance, Charles Sturt University performed slightly ahead of the University of Western Sydney as the most efficient network university from 1988 to 1993. However, UWS performed best if CSU's higher proportion of external students is taken into account. CSU's good performance, in terms of institutional efficiency, is largely based on its proportionately less increase in expenditure per EFTSU and per completion between 1988 and 1993. However, UWS performed well by having the smallest increase in expenditure per completion. Its increase in expenditure per EFTSU can be explained by its significantly higher proportion of internal students compared with UNE and CSU. UNE had the smallest increase in expenditure per EFTSU during the period under review but finished behind the two other network universities in terms of overall efficiency.

The analysis provided some support for proposition 15. Charles Sturt University was the only one of the network universities which clearly removed duplicated resources or activities within its network structure. However, the research findings show that CSU did not significantly improve its performance. It certainly improved its effectiveness, as did the two other network universities, but it did not improve its efficiency. It is assumed throughout the literature that the removal of duplicated resources and activities will improve an organisation's efficiency. However, the research findings did not support this proposition. CSU did have the lowest expenditure per EFTSU of the three network universities in 1989 and in 1992, however, its ratio was only slightly less than UWS's and CSU's increase between 1989 and 1992 was similar to both UWS and UNE. Similar conclusions can be drawn for expenditure per completion. CSU's expenditure per completion was significantly less than both UNE and UWS. However, its increase in expenditure between 1989 and 1992 was slightly higher than UWS's. CSU was the most efficient of the network universities during the period under review but did not perform
better than UWS if CSU's high proportion of external students is taken into account. Furthermore, UWS performed slightly better than CSU in terms of overall effectiveness. Therefore, it is reasonable to conclude that the removal of duplicated resources or activities within a federated network structure may ensure improved performance of the network. However, UWS did not remove duplication from its network structure and its performance provides support for the proposition.

The analysis provided some support for proposition 16. Certainly, the network universities improved their effectiveness, however, they did not significantly improve their efficiency. The network universities did not perform well between 1988 and 1993 in terms of their efficiency. The Commonwealth Government hoped that universities would improve their efficiency by increasing their inputs (EFTSU) and outputs (graduates) while also proportionately decreasing their expenditure. The fundamental objective for higher education institutions in terms of their efficiency, is to produce quality graduates at minimal cost. The network universities failed to achieve this objective. Indeed, all three network universities increased their expenditure per EFTSU and per completion between 1988 and 1993. The network universities' increased expenditure per EFTSU and per completion between 1988 and 1993 suggests that the member institutions were more inefficient as network universities than they were as separate institutions. However, the conclusion that the network universities have proved to be inefficient needs to be qualified by comparisons with the Australian higher education sector as a whole. It can be argued that the network universities were simply "catching up" with normal university expenditure patterns as they made the transition from CAEs to universities. This argument is supported by the fact that the network universities' expenditure per EFTSU was still less than the industry norm in 1992. Similar arguments exist in terms of expenditure per completion. UWS and CSU's performance in decreasing their expenditure per completion relative to the industry trend was outstanding. While the network universities' efficiency did not increase between 1988 and 1993, they did perform well in comparison with the industry norm. The network universities certainly improved their effectiveness during the period under review. Therefore, it is reasonable to conclude that a federated network structure will improve network member performance.

8.2.2 The Theoretical Conclusions

8.2.2.1 Introduction

The theoretical conclusions are divided into three sections. The first section reviews the literature's frameworks for analysing the network's historical context. The second section reviews the literature's frameworks for analysing the network in operation. While the third section reviews the literature's frameworks for analysing the network's performance. The literature's frameworks for improving interorganisational relationships within network are reviewed in this chapter's next part.
8.2.2.2 The Network's Historical Context

There was some support for the proposition that organisations enter into relationships with other organisations in order to reduce environmental uncertainty and anxiety for senior executives. Environmental uncertainty is caused by the perception of information about the environment by those within the organisation responsible for gathering, interpreting and disseminating the information. In the case of the network university institutions, the responsibility for interpreting the implications of the White Paper rested with each institutions' senior executives. The senior executives interpreted the White Paper and made the decision to enter into relationships with other network member institutions. This provides some evidence to support the literature's proposition. However, there were other factors involved in the decision to join a network university. These included survival, university status, and funding growth. It is clear, though, that the reduction of environmental uncertainty caused by the White Paper was a strong factor in the motives of each of the network university institutions in forming interorganisational relationships with other network members.

There was support for the proposition that the organisational exchange view of Interorganisational Relations has ignored the complexity of the interaction once organisations decide to exchange resources. This research supports the suggestion that the literature's organisational exchange framework needs to take into account the complexities of the relationships between organisations in seeking resources in interorganisational relations.

There was also support for the proposition that the literature has also failed to adequately explore the degree of importance placed on the relationship by each participant organisation. This research has shown that the degree of importance placed by each member influenced the degree of desired autonomy, permanency of the relationship, and the need for mutual benefit. The literature needs to establish criterion for participant organisations to determine the degree of importance they place on their interorganisational relationships. The basis of this criterion should be:

1. The autonomy the organisation desires within the relationship.
2. The organisation's anticipated permanency of the relationship.
3. The benefits the organisation wants from the relationship.
4. The costs the organisation is willing to accept from the relationship.
5. Key performance targets or outcomes expected from the relationship.

It is important that each organisation involved in the relationship determines the suitability of the relationship based upon these criteria and makes its expectation of the relationship known to the other organisations involved.
There was support for the proposition that there needs to be further empirical research into the causes and implications of partially mandated relations. The analysis has shown that the nature of the mandate can cause problems by allowing for different interpretations of whether the relation is voluntary, mandated or partially mandated. Chapter six showed how the weaknesses of the network universities’ legislation contributed to the behaviour of network members who felt they had entered into the network voluntarily and then felt trapped by its mandate. Similarly, it explored the behaviour of members who felt they entered into a mandated relation voluntarily, or who began a mandated relation with a formal agreement which then becomes the basis of a mandate, and then became frustrated by the mandate.

There was support for the proposition that there needs to be further empirical research into interorganisational relationships within federated network structures. The analysis showed the need to explore the dynamics of the political economy within federated network structures and its implications for the network’s interorganisational relationships.

8.2.2.3 The Network in Operation

There was some support for the proposition that the tension between coordination and autonomy within federated network structures needs to be resolved. The federated network’s governance structure creates a strong political economy. The political economy is the forum for the network to determine the role of the central coordinating agency and the role of the network members. These roles are largely defined by the degree of member autonomy and the role of the member Chief Executive Officers. The degree of member autonomy defines each federated network structure and determines the CEOs role. The CEOs play the network’s critical role by determining an appropriate balance between network member coordination and autonomy. The CEOs, within the network’s political economy, determine on which issues they pursue their member’s interests and which to pursue the interests of the network as a whole. The appropriate balance between coordination and autonomy varies with each network model but the member CEOs have the power to decide whether their member pursues coordination or autonomy. The determination of an appropriate balance for each network model rests with defining the role of the member Chief Executive Officers. Certainly the role of the central coordinating agency, the role of the network members, and the academic and administrative governance of each network structure is heavily influenced by the member Chief Executive Officer’s role within the network’s governance structure.

There was support for the proposition that there is a need to resolve the problem of what to do when the central coordinating agency is a source of conflict. The analysis has shown that the central coordinating agency was a source of conflict at each of the network universities. This is an important finding because it contradicts the literature’s empirical investigation of the relationship between the central coordinating agency and network members within a federated network structure. Under these
circumstances, the central coordinating agency should aim to convince network members that it provides more benefits than costs. In doing so, it should aim to facilitate relations between members, play a stronger role in regulating and ordering behaviour between members by devising an appropriate punishment for disorderly behaviour, and quantify the range of services it provides for the members, particularly those functions the members could not achieve as independent institutions.

There was support for the proposition that there is a need to provide a more comprehensive empirical investigation of the use of political processes by network members in pursuing resources and power within federated network structures. This research finds that such investigations should address the following theoretical framework:

1. Analyse the network's political processes in terms of whether the network under review is a centralised network model, federative network model, or network member autonomy model. There will be important differences in the strength of the political economy in each model.

2. Analyse the network's governance structures along the same three dimensions.

3. Analyse the network's interorganisational conflict along the same three dimensions.

4. Use network member autonomy as the definitive principle in defining the network structure and the political processes of the structure.

This research also supports the proposition that there needs to be further investigation of the relationship between network member autonomy, network governance structures, and interorganisational conflict between network members. It proposes that there is a relationship between autonomy, governance, and conflict in terms of how they combine to define the network model along the three dimensions above.

There was support for the proposition that there is a need to further examine the specific structural aspects of the network structure, particularly what makes it different from other organisational structures and its advantages and disadvantages from a structural sense. There is also a need to consider the implications of the centralisation versus decentralisation debate within the context of the three federated network models.

8.2.2.4 The Network's Performance

There was support for the proposition that there is a need to provide a more comprehensive framework for evaluating the performance of federated network structures, particularly their efficiency and effectiveness. It is also important to develop frameworks for comparing the performance of the three network models: the centralised network model, the federative model, and the network member
autonomy model. There is also a need for further research into the association between the political economy and its effects on the effectiveness of interorganisational relationships within each of the three network models.

8.3 Recommendations

8.3.1 The Literature's Solutions

8.3.1.1 Introduction

This first part of the research's recommendations reviews the literature's solutions for improving interorganisational relationships within federated network structures. It is divided into three sections. The first section considers ways to improve coordination, collaboration and cooperation within a network. The second section considers specific structural ways to improve relationships including the role of the central coordinating agency, boundary spanners and interorganisational groups. The third section considers ways to manage the network's political economy.

8.3.1.2 Coordination, Collaboration and Cooperation

The focus of the literature on improving interorganisational relations is on coordination and how to coordinate relations between organisations. Whetten (1981) suggests that perhaps the most common research question asked by interorganisational relations theorists has been, "How can we improve coordination between interdependent organisations?". There have been a number of empirical studies which focused on this question: Litwak and Hylton (1962), Aiken, Hage and Marrett (1971), Litwak and Meyer (1974), Schermerhorn (1975), Gray (1985, 1989). These researchers have documented coordination programs and identified several coordinating structures and prescriptive models. Gray has explored collaboration as an extension of cooperation.

This research found that the literature's models for improving coordination within interorganisational relationships are not effective for federated network structures. They are not effective because the network's political economy creates a political process which makes traditional models of coordination, collaboration and cooperation difficult to achieve. The research's prescriptive model presented later in this chapter takes components of the literature's models to create a prescriptive framework for improving coordination between members within a federated network structure. It modifies the literature's models to take into account the network's political economy and the need to link coordination with the members' needs and pursuit of funds and authority from the network structure.
8.3.1.3 Specific Structural Issues

The literature has considered a number of specific structural issues designed to improve interorganisational relationships. The three main structural issues are the role of the central coordinating agency, the introduction of boundary spanners and interorganisational groups. This research has found that these three structural issues are not effective in improving interorganisational relationships between members in federated network structures. However, this may be because the literature has not adequately addressed how to use the central coordinating agency, boundary spanners and interorganisational groups to improve relationships within federated network structures. Components of the literature's models for these specific structural issues are included in the prescriptive framework presented later in the chapter.

8.3.1.3.1 The Role of the Central Coordinating Agency

The main research findings in chapter six considered the role of the central coordinating agency in facilitating interorganisational relations within a network. The research found that the central coordinating agency was not effective in facilitating relations or ordering behaviour within the federated network structure. However, the agency did have more success in the centralised network model. This does not suggest that the network universities' central coordinating agencies were ineffective but that they did not perform the role suggested by the literature. Furthermore, the agency's capacity to cause interorganisational conflict between itself and the network members was concerning. This does not suggest there is no need for a central coordinating agency within a federated network structure but it does suggest that the role of the agency needs to be revised and developed to address some of the issues identified by this research.

8.3.1.3.2 Boundary Spanners

There have been a number of studies which have confirmed the importance of boundary spanning roles to link organisations. The literature suggests that these roles are vital to the effective monitoring of the environment and to the transfer of technology and information across organisational boundaries.

The importance of boundary spanning in enabling organisations to interact with their environment is clear. However, the distinction between formally designated boundary spanners and boundary spanning as part of the duties of senior staff has not been made clear. It is reasonable to assume that boundary spanning should be part of the role of any organisation's senior staff. Some senior managers might view facilitating the flow of information into and out of their organisation, protecting their organisation from the environment, and building bridges or links with other organisations *simply part
of the job*. From this perspective, boundary spanning is normal organisational behaviour. The need for staff to be placed in boundary spanning roles becomes unnecessary and organisations who do so may be criticised as overly bureaucratic and wasting resources on “professional communicators.” Further empirical investigation needs to be done on the need for boundary spanning as an isolated role within organisations compared to boundary spanning activity included in the functions of senior managers.

8.3.1.3.3 Interorganisational Groups

The literature suggests that interorganisational groups improve coordination and cooperation within a network because they bring staff together formally to discuss network-wide issues which might benefit their member and the network as a whole.

Interorganisational groups are perhaps the most obvious method of bringing network members together under the umbrella of the network as a whole. These groups - whether they be formal Boards, Committees, Task Groups or Working Parties - are important because they bring staff from across the network together to discuss mutual benefits and issues of importance to their members and to the network as a whole. They are important from a symbolic point of view because they represent efforts at cooperation and collaboration. However, they are also important from a tangible point of view because they have the potential to draw on the substantial expertise which exists within the network.

It is clear that there was a predominance of interorganisational groups within the three network universities. This research found that the creation of additional interorganisational groups will not necessarily improve interorganisational relations within a federated network, however, that effective interorganisational groups will.

8.3.1.4 Managing the Political Economy

Benson (1975) suggests that the way to manage the federated network's political economy is to achieve a balance between the network's political forces. He suggests that there are four analytical dimensions to understand this concept of network balance:

1. domain consensus or agreement between agencies on the role and scope of each.
2. ideological consensus or agreement between agencies on the appropriate approaches to their common or similar tasks.
3. evaluation of the judgements between agencies of the quality of work of each.
4. work coordination, referring to the conduct of joint, cooperative or articulated activities and programs.
Benson suggests that these dimensions form a system of interrelated variables which tend towards balance in the sense that if one achieves high levels then the others are drawn upwards.

This research found that CSU achieved a network balance because its members agreed on the centralised network model and shared a common understanding of how the network was to operate. UWS has attained a tenuous network balance because its members have agreed on the network member autonomy model and share a reasonably common understanding of how the network was to operate. UWS has not yet achieved a true network balance because it has not resolved how to attain synergy from the network member autonomy model. UWS’s network has created a very strong political economy. Its political forces are balanced tenuously because the members and the central coordinating respect and understand the members’ autonomy. Any threat or dispute over a member’s degree of control within the network's political economy would disrupt the network balance and prove dysfunctional to the network. UWS will only achieve true network balance when it determines how to resolve network member independence with member interdependence within the network member autonomy model. UNE did not achieve a network balance because its members could not agree on its interpretation of the federated network structure. UNE, Armidale and UNE, Northern Rivers disagreed over the degree of control they enjoyed within the network's political economy. UNE, Armidale felt it should have had more control than UNE, Northern Rivers while UNE, Northern Rivers felt it should have had the same control as UNE, Armidale. UNE’s failure to achieve a network balance led to deteriorating interorganisational relationships between the two members and ultimately the network’s de-amalgamation. Components of Benson’s model for achieving network balance are included in the prescriptive framework presented next.

8.3.2 The Research's Prescriptive Framework

8.3.2.1 Introduction

This second part of the research's recommendations presents a prescriptive framework for improving interorganisational relationships within federated network structures. It is divided into three sections. The first section considers the historical context of forming and developing interorganisational relationships within a network. The second section considers the network in operation and ways to improve relationships within the context of the political economy. The third section considers ways to improve the network’s performance. The framework does not draw conclusions on the comparative merit of the three network models: the centralised model, the federative model and the network member autonomy model. It concludes that the three models have advantages and disadvantages and are effective in different organisational situations. The prescriptive framework makes recommendations for each of the three network models.
8.3.2.2 The Historical Context

This research found that the effectiveness of interorganisational relationships within federated network structures is heavily influenced by the relationships' historical context. The historical context includes the members' motivations for forming interorganisational relationships with other members, their interpretation of the federated network structure and the mandate, their perception of the permanency of the relationship, and their perception of the benefits and costs which would result from the relationship. These issues were essential to the historical development of the interorganisational relationships within the network universities. They were also fundamental to the operation of the federated network structure and its performance.

8.3.2.2.1 Member Motives

Organisations form interorganisational relationships in order to a) control or reduce their environmental uncertainty and/or b) to procure resources necessary for their survival and success. Prior to forming interorganisational relationships, organisations should agree on a shared understanding of:

a) the environmental uncertainty each organisation is facing, whether the organisation seeks to control or reduce its environmental uncertainty, and how it expects the interorganisational relationship to achieve these objectives.

b) the resources each organisation seeks from the interorganisational relationship.

c) the benefits and costs each organisation expects from the interorganisational relationship.

The organisation should feel comfortable with the objectives of the organisation(s) it is forming a relationship with in terms of both environmental uncertainty and resource procurement.

8.3.2.2 Interpretation of the Mandate

The nature of the mandate formalising the interorganisational relationship will influence the behaviour of the organisations involved; particularly their degree of autonomy, their perception of the permanency of the relationship, and their need for mutual benefit. Prior to forming interorganisational relationships, organisations should agree on a shared understanding of whether the relationship is voluntary, mandated or partially mandated.

It is extremely important to determine an appropriate formal agreement which binds organisations in interorganisational relationships. Prior to forming interorganisational relationships, organisations should agree on a shared understanding of the formal agreement. The strength of the agreement will vary depending upon whether the relationship is voluntary, mandated or partially mandated. This
research has found that federated network structures bound by government legislation must address the following issues:

a) the legislation must be clear, unambiguous and not open to interpretation.

b) the legislation must explain the nature of the federated network structure in terms of whether it is a centralised, federative, or network member autonomy model; and clearly explain the degree of control/autonomy to be allocated to the central coordinating agency and the network members.

c) the legislation must clearly state that all network members are afforded equal status and the same degree of control within the federated network structure.

d) the legislation must explain the role and function of the network's central coordinating agency and the network members.

e) the legislation must explain the network's governance structure; more specifically, the role, function and relationship of the network's main decision making bodies and individuals.

f) the legislation must explain the nature of the relationship between the network members and the central coordinating agency and between the network members themselves in terms of multiplexity of ties, formal and informal interaction patterns, and specific structures designed to improve network coordination.

g) the legislation must reconcile the role of the former member Chief Executive Officers by combining an appropriate level of network-wide activity with member specific activity depending upon which network model is adopted.

The research found that the legislation which created Australia's three network universities was flawed and contributed to many of the problems which emerged in the network's interorganisational relationships. Consideration of these issues would have strengthened the nature of the federated network universities' mandate and resolved many of the difficulties which were to occur.

8.3.2.2.3 Interpretation of the Federated Network Structure

If a federated network structure begins without a formally agreed upon network configuration, network members will be forced to construct their own configuration. This causes problems in the network's interorganisational relationships as members try to impose their interpretation of the network on the other members. This causes interorganisational conflict between the members created by interdependence, and structural and operating conflict.

There are two types of network configuration: the visible and the invisible. Both refer to how the network is organised. The visible configuration refers to the formal structure of the organisation; its forms of governance, decision making; roles and responsibilities; and organisational hierarchy. It is the traditional concept of organisational structure and control which is commonly plotted on diagrams or organisational charts in terms of boxes and arrows. It indicates who reports to whom. The invisible
configuration refers to that which cannot be plotted on paper. It refers to relationships within the organisation. The invisible configuration is especially important within federated network structures because it explains interaction within the network in terms of the pursuit and funds and power.

Prior to forming interorganisational relationships, organisations should agree on a shared understanding of their interpretation of the federated network structure. Network members need to agree on the visible and invisible network configuration. This is best done by agreeing upon whether the federated network is the centralised model, the federative model, or the network member autonomy model. The distinctions between the three models will explain the network configuration.

8.3.2.3 The Network in Operation

This research found that the effectiveness of interorganisational relationships within federated network structures is heavily influenced by the network's governance structures and its political economy. The governance structures include the role of the central coordinating agency, the role of the network members, and the core business decision making structures. The political economy involves members' pursuit of funds and authority within the network and it dominates the network's interorganisational relationships. It also found that the network's specific structural aspects will influence its interorganisational relationships. These issues were essential to the operation of the interorganisational relationships within the network universities. They also heavily influence the network's performance.

8.3.2.3.1 Governance Structures

The organisations must agree on a shared understanding of their network's governance structure. The degree of control of the central coordinating agency and the network members helps to define each network's interpretation of the federated network structure from the strong network member autonomy model, with low central coordinating agency control and high network member control, to the strong centralised model, with high central coordinating agency control and low network member control. The governance structures help to define these levels of control. It also explains the operation of each network's political economy. The governance structure should clearly reflect the network model. Members and the central coordinating agency should hold regular reviews to ensure the network's governance structures satisfy their needs and is consistent with their agreed understanding of the network model.

The governance structure should aim for a balance between network-wide and member specific objectives. It should provide a decision making structure which allows for the network to achieve synergies for the network as a whole while also allowing for members to pursue individual objectives.
These member objectives should not be achieved at the expense of the network as a whole. However, this objective will be constrained by the network model. There should be a stronger focus on network-wide objectives for the centralised model's governance structure; the federative balance should aim for a balance between network-wide and member specific objectives; while the network member autonomy model should focus on member specific activities while still seeking network-wide synergies.

The two most important factors in defining the governance structure of a federated network are the roles of the central coordinating agency and the member Chief Executive Officers. The organisations involved in a federated network structure should agree on a shared understanding of these two roles prior to forming interorganisational relationships and periodically review the roles throughout.

The role of the member CEO largely defines the role of the network member within the federated network structure. The CEO's role within any network structure will reflect the degree of member autonomy which, in turn, defines the network model. The role of the CEOs is, therefore, the key component of a network's governance structure because it defines the role of the network members. The importance of the member CEOs' role is explained by referring to the basis of Interorganisational Relations.

The role of the member CEOs is determined by the degree of member autonomy. A high degree of member autonomy, such as that provided by the network member autonomy model, means that the CEOs have almost sole responsibility for the day to day operations of their network member. A moderate degree of member autonomy, such as that provided by the federative model, means that the member CEOs are responsible for managing their network member's operations but also have a strong role in managing the network. Under this model, the CEOs have key network-wide responsibilities in addition to managing their network member. While they still pursued resources for their member, they are more conscious of their network-wide responsibilities and try to consider the needs of the network as a whole before their network member's. A low degree of member autonomy, such as that provided by the centralised model, means that the CEO has little or no responsibility for managing their network member and a strong role in managing the network as a whole. The CEOs have key network-wide responsibilities and do not pursue resources for their network member. Resource decisions are made centrally decisions are made based upon merit taking into account the needs of the network as a whole.

The most difficult task in defining the role of the member CEOs within a federated network structure is in reconciling their dual, and often conflicting roles, as members of the network's senior management team and as CEO of their member. This reconciliation is difficult because the federated network structure places the CEOs in the conflicting and contradictory position of having to act in the interests of the network as a whole and to concurrently act in the interests of their network member. This dual role becomes impossible when decisions must be made which will affect members' pursuit of funds and authority within the network. The CEO is then faced with a decision of whether he or she is more
negligent in failing his or her responsibility to the network as a whole or to their network member. While this decision is made easier by the network's interpretation of the federated network structure, the final decision is made by the individual themselves and indicates whether they place the network as a whole before their member's interests or vice versa.

An effective federated network structure will agree on a shared understanding of the role of its network members, particularly in terms of member autonomy. This can be done by developing a visible and invisible governance structure which supports the shared understanding of the role and is best achieved by defining the role of the member CEOs.

The role of the network's central coordinating agency is the other important factor in the operation of the federated network structure. The literature suggests the role of the central coordinating agency within a federated network structure should be to coordinate, facilitate, and to some degree, regulate relations between the network members. This suggests that the role of the agency should be to induce, monitor, and improve relations between the members. Its role is to integrate the activities of the network members to produce synergy from the network. If the network could not produce synergy, the cost of being involved in the network would outweigh the benefits and the members would achieve more as independent institutions. Therefore, the agency has a critical role in justifying its own existence and the existence of the network. Clearly, if the network universities were to be successful the network members would need to interact and collaborate to some degree otherwise the members should have remained independent institutions. The network members expected the Agency to facilitate interaction and collaboration within the network structure. They expected the Agency to coordinate the members' network-wide activities in order to achieve synergy. This was seen by the members as the Agency's main role and the relationship between the Agency and the members was based, to some degree, upon the members' perception of how well the Agency was performing this role.

An effective federated network structure will agree on a shared understanding of the role of its central coordinating agency, also in terms of member autonomy. This can be done by developing a visible and invisible governance structure which supports the shared understanding of the role.

The role of the central coordinating agency and the network members will vary depending upon the network model. The critical component for effective federated network structures is to agree on a shared understanding of visible and invisible governance structures which reflect the network model adopted.

8.3.2.3.2 The Political Economy

The influence of the political economy will vary with each network and with each model. Its influence will be strongest in the network member autonomy model, less so in the federative model, and
weakest in the centralised model. However, the nature of the federated network structure means that each network will be influenced by the political economy.

The organisations must agree on a shared understanding of their network’s political economy. This can be done by developing an agreed visible and invisible network configuration in terms of the network members’ pursuit of funds and authority. This should be done by agreeing on the degree of network member autonomy and control, the degree of network member decision making, and managing the potential for interorganisational conflict.

Network members within a federated network structure will want to retain autonomy and control over their operations. This is because the member institutions were independent institutions prior to becoming a part of the network structure. They relinquish autonomy and control when they join the network because they can no longer act independently and must consider the implications for the other members and the network as a whole. However, the members will want to relinquish as little autonomy and control as possible.

The degree of network member autonomy is defined by the network model. The centralised model provides low member autonomy and high central control by the central coordinating agency. The federative model provides a balance between member autonomy and central control. The network member autonomy model provides high member autonomy and low central control. The degree of member autonomy and control then distinguishes between network models.

Network member autonomy and control is an important factor in the relationships between network members within federated network structures. The strength of the political economy will influence the importance of member autonomy to the network’s interorganisational relationships. The centralised network model’s weak political economy will make member autonomy a relatively unimportant factor in the relationships between members. The federative model’s moderate political economy will make member autonomy reasonably important. However, the network member autonomy model’s strong political economy will ensure that member autonomy is a very important factor in a network’s interorganisational relationships. A strong political economy can maintain good relationships between members if the degree of member autonomy and control is accepted and respected by each member. However, if members fail to agree on the degree of member autonomy, the political economy’s balance of power will be disrupted each time a member tries to assert its interpretation of the network’s member autonomy and control.

Network member decision making is an extension of the concept of member autonomy and control. Members’ power to make decisions will reflect their degree of autonomy and control. Members will want to retain as much decision making power as possible, particularly in terms of managing their day to day operations. Members will also want to have input into decisions affecting the network as a whole.

Network member decision making can cause interorganisational conflict if the members fail to accept or
respect other members' decision making powers within the network's political economy.

Interorganisational conflict within a network's political economy can be managed in terms of three endogenous variables: interdependence, structural, and operating conflict.

In an effective federated network structure, a balance needs to be achieved between member independence and network interdependence. The degree of interdependence within a federated network structure is determined by the network model. The degree of interorganisational conflict between the members varies depending upon the interdependence within the network model.

When a network is created without a visible and invisible network configuration, the network members need to agree on a shared understanding of the network configuration as soon as possible. The configuration needs to begin by establishing the basic identities and responsibilities that define the interorganisational relationships between the network members and reflect an ability to establish or maintain the basic rules or principles that govern the relationship.

Federated network structures need to resolve the task expectation and role of the central coordinating agency and each of the network members. This will be defined by the network model and the network configuration. Members then need to agree on a shared understanding of each members' role and tasks within the network structure.

8.3.2.3.3 Specific Structural Aspects

The federated network structure presents peculiar problems in terms of duplicated structures. While it might appear sensible or even necessary to centralise some functions in order to save costs and therefore gain synergy from the network, the network's political economy makes centralisation difficult. The strength of the political economy is determined by the force with which members pursued funds and authority within the network structure. In a strong political economy, such as at the University of Western Sydney and the University of New England, the members fought hard to maintain their autonomy and were reluctant to give up a degree of this autonomy by allowing some functions to be centralised. In a weak political economy, such as at Charles Sturt University, the members do not have the power or control within the network structure to fight to retain their functions. Strong political economies make it difficult to centralise functions and remove duplicated structures while weak political economies make it far easier.

However, even in strong political economies, senior management may concede that it is simply too wasteful not to centralise some functions and remove some duplicated structures. Even a strong network member autonomy model can allocate some central functions whilst still retaining strong member autonomy. The question is whether to centralise functions and, if so, which functions. For the centralised network model, clearly all administrative and academic functions can be centralised and
functions carried out centrally in one location for the network as a whole. For the federative model, the majority of administrative functions can be carried out centrally while academic functions would continue to be decentralised and carried out at the member level. For the network member autonomy model, some administrative functions can be carried out centrally while academic functions would continue to be decentralised and carried out at the member level.

Generally speaking, the centralised administrative structures should occur in those areas which affect the network as a whole and there is the potential for significant cost savings or other synergy benefits. There are some functions which should be carried out centrally or with central leadership and member support. These include:

- Network strategic planning
- Network secretarial services
- Network administrative information systems
- Network corporate promotion
- Network-wide industrial relations

There are also functions in which the central function can be carried out by staff of one member on behalf of the network as a whole. These include:

- Network Equal Employment Opportunity
- Network Freedom of Information
- Network consolidated accounting

In addition, there are areas for which common structures should be considered. These include:

- Administrative information systems
- Finance and accounting
- Payroll and personnel administration

Each of these areas present the potential for cost savings or synergy at each of the network universities. There are other areas such as purchasing, printing, security and so on where the university could gain cost savings by having the function performed centrally.

8.3.2.4 The Network's Performance

The critical factor in measuring and improving the performance of a federated network structure is to ensure that the combined efforts of the network members exceeds the sum of the individual performance of each member. The network should also be able to demonstrate that each member
achieves more from being a part of the network than it did as an independent organisation. This is done by achieving synergy from the network structure. The means for attaining synergy varies with each network model. However, the prescriptive framework for achieving synergy is the same for each network model. The framework includes ways to increase coordination and collaboration; ways to manage the political economy; and an adhocracy within the network structure.

8.3.2.4.1 Coordination, Cooperation and Collaboration

The literature's models for coordination, cooperation and collaboration within federated network structures need to be reviewed by further research. This research found that the literature's models must be revised to take into account the need to manage the network's political economy. A strong political economy will negate efforts to introduce coordination, cooperation and collaboration to the network; while a dysfunctional political economy will make member cooperation almost impossible.

8.3.2.4.2 Managing the Political Economy

The success of a federated network structure largely depends upon the network's ability to manage its political economy. This research has shown how the political economy can destroy a network (UNE). The need to manage the political economy will vary with each network model. The centralised model requires the least management of the political economy because it creates a weak political economy. The federative model's management requires an astute balance between university-wide and member specific objectives and the network forces which result. The network member autonomy model requires the strongest management because it creates the strongest political economy. The challenge is to ensure the political economy does not become dysfunctional to the network's performance. This is done by ensuring member interests do not dominate the interests of the network as a whole.

The key to managing the political economy lies in gaining a shared agreement of the roles of the network's three key forces:

- The role of the central coordinating agency,
- The role of the network members, and
- The role of the member Chief Executive Officers.

If the network can develop a visible and invisible network configuration which addresses these three roles and which also reflects the adopted network model, it will have the basis for managing its political economy.
The final component of this research's prescriptive framework is to develop an adhocracy within the federated network structure. The adhocracy is proposed as a loose structure within a structure which can move the network towards the synergy it has found difficult to attain. The adhocracy provides a way to coordinate staff from across the network without threatening the network model. In addition, the concept of an ideological organisation is proposed as a way to introduce a culture to networks which would again help move them towards attaining synergy.

The development of an innovative organisation is based on the premise that the federated network structure needs a network configuration which has a distinctive structure to complement the invisible structure of ideology and mission and balances the network forces.

This can be achieved by developing a configuration for the network as a whole and a different configuration for the members. The network-wide structure should not be a hierarchical structure but an innovative structure which utilises and facilitates the expertise and talents of member staff and central coordinating agency staff in project teams. These teams would be brought together for the benefit of the network as a whole.

Mintzberg suggests innovation of the sophisticated variety requires a flexible structure which draws together different forms of expertise. Within the typical professional organisation, it relies on the standardised skills of its experts to achieve coordination. This should continue within the members but within the network as a whole the divisions of labour, formalised behaviour and hierarchical structure should be discarded to allow for innovation and creative thought. Staff brought together as teams should be encouraged to use their existing skills and knowledge as bases on which to combine and build new ones. Similarly, senior administrators in each functional area should be brought together as teams of experts to advise the network's senior management on key areas on network-wide policy and ways to gain synergy.

The quality of this advice would justify the existence of the adhocracy which develops. It would break through the restrictions of conventional specialisation and differentiation by assigning problems not to individual experts but to multidisciplinary teams that merge their efforts. Each team would focus on one project or problem. The results would benefit the members and the network as a whole. The key components of the political component would operate more effectively because they would have far better information and their major constituencies would feel involved in the decision making process. The efforts of the groups must be innovative and not routine. They must be encouraged to discard member interest and focus on creating solutions and ideas which move the network forward.

The adhocracy is not an efficient structure. The aim of the network should be to seek efficiencies in the more traditional operation of its members and gains from the coordinated activities undertaken by central coordinating agency for the network as a whole. The development of the adhocracy for the
coordination of network-wide efforts or joint action would not be efficient in the traditional sense because it does not perform the ordinary things. It is designed for the extraordinary. The traditional structures gain efficiencies through standardisation. The adhocracy is unable to standardise because it adapts to each new problem uniquely. It gains its effectiveness (innovation) at the price of efficiency. However, this study recommends that the benefits of innovation is the best means to coordinate the efforts of the members. The best way to use the talents and expertise of the network's staff is to incorporate them as part of the invisible structure of the network and form an adhocracy within the federated network. They need not meet every week, nor every month or even every six months but they should be prepared to allocate their special talents when the network needs them.

A strong impression gained from this research was that the network universities would benefit greatly if they developed a strong sense of culture and ideology.

While structure is important, the most important part of the federated network structure is its invisible configuration: that which cannot be described or illustrated by graphs or charts. One of the key components of this invisible structure is the shared perspective or the collective mind of the organisation.

The federated network organisation's culture and ideology is developed by its leadership. An effective leadership should begin by understanding the federated network structure.

8.4 SUMMARY OF IMPLICATIONS

8.4.1 Introduction

This section provides a final summary of the research by highlighting its implications in terms of a) further research and b) for the Australian Government and the subject institutions: the University of Western Sydney, Charles Sturt University, and the University of New England.

8.4.2 Implications for Further Research

The research highlighted a number of weaknesses within the literature. Some of these were explored by the research and, while some questions were answered, further questions remain. There is an opportunity to pursue further research in a number of areas. These include:
the need to establish criterion for organisations involved in interorganisational relationships to
determine the degree of importance they place on the relationship and how this influences
the degree of desired autonomy, the permanency of the relationship, and the need for mutual
benefit.

the need for further research into the causes and implications of partially mandated relations.

the need to explore the behaviour of organisations who felt they entered an
interorganisational relationship voluntarily, and then felt trapped or frustrated by its mandate.

the need to examine whether there is an association between the historical reasons for
interorganisational relationships forming, the nature of the mandate, and the member
organisations' interpretation of the federated network structure.

the need to explore the dynamics of the political economy within federated network structures
and its implications for the network's interorganisational relationships and its performance.

the way to achieve synergy from a federated network structure.

the distinction between federated network structures and other types of interorganisational
relationships.

the role of the central coordinating agency within federated network structures.

the role of the members within federated network structures.

the role of the member Chief Executive Officers within federated network structures.

governance structures which develop appropriate visible and invisible network configurations
for each of the three network models: the centralised model, the federative model, and the
network member autonomy model.

whether the federated network structure is more effective and efficient as a centralised or
decentralised structure by comparing the three network models.

In addition, further work is required into the prescriptive framework developed by this research for
improving interorganisational relationships within federated network structures.

There is an opportunity for a researcher to develop a text which explains the advantages of
interorganisational relationships for both private and public sector organisations. Interorganisational
Relations remains a fragmented field which has the potential to be drawn together as a legitimate
discipline. The opportunity is to demonstrate its benefits in a corporate and strategic sense.

8.4.3 Implications for Government

In chapter one, it was argued that this research would have practical implications for Government.
These implications are associated with the research's aim to link the research to the Government's
objectives in creating the three network universities. Chapter four provided an environmental
background for the research and showed how important the Government's objectives were in the
creation, development, and performance of the network universities. This research reviewed the
performance of the network universities within the context of the Federal Government's economic and educational objectives for the UNS and its higher education institutions. This review has demonstrated to the Government how the network universities have performed between 1988 and 1993 and may indicate whether the Government should be satisfied or dissatisfied with their performance. It also provides a framework and a background for the Government to consider a review of the entire UNS within the context of the White Paper objectives.

However, perhaps more importantly, the research has broader implications for the Government in the design and management structure of higher education institutions and indeed all public institutions. The research has shown the importance of managing the political processes which result from the merger of organisations. It also showed the importance of designing management structures which reflect the interests and objectives of the organisations involved. As interorganisational relations become increasingly important, the federated network structure can provide a solution to the problem of how to link separate organisations in order to achieve synergies.

8.4.4 Implications for the Organisations

In chapter one, it was also argued that this research would have practical implications for the organisations involved. These implications are associated with the design of management structures which would assist the network universities to achieve synergy from the network structure. The universities and their member institutions will also be interested in the review of their performance and how their network model compared with the two other universities.

The research has shown how each of the network universities could revise or change their network model to achieve greater synergy from the network structure. The prescriptive framework shows how a federated network structure's interorganisational relationships may be improved. It also highlighted the problems which have occurred at each of the network universities which may assist them to learn from their mistakes. Whereas the research cannot assist the network University of New England because it has been de-amalgamated, it may help the institutions involved to clarify where mistakes were made.

The research is interesting from an historical perspective because it tells the story of three embryonic institutions during a period when Australian higher education experienced unprecedented reform. However, it also hoped that the Government and the organisations involved will gain from this thesis.
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