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Mindful IT adoption: making the right strategic decisions by knowing why and how to adopt enterprise systems?

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Keywords
Mindful, adoption, making, right, strategic, decisions, knowing, adopt, enterprise, systems

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Mindful IT Adoption: Making the right strategic decisions by knowing why and how to adopt enterprise systems?

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ABSTRACT

Corporate investment in enterprise level IT systems has been characterised by high rates of failure. The paper presents a knowledge based perspective to examine how firms adopt and implement enterprise systems in order to better understand how organisations can achieve reliable outcomes from such investments. The case presented explores the key decision stages of a major ERP investment, focusing on the strategic reasoning behind each decision. Particular attention is directed to the relationship between adoption know-why and implementation know-how to assess whether managers have been mindful or mindless in their investment decisions.

Keywords: Information technology adoption, Enterprise Resource Planning, decision making, know-how, know-why

1. INTRODUCTION

The decision to adopt an Enterprise System (ES) has become one of the most time-consuming and risky strategic decisions for a top management team (Sawyer, 2001). In particular, large scale Enterprise Systems such as ERP (Enterprise Resource Planning), CRM (Customer Relationship Management) and SCM (Supply Chain Management) involve considerable organisational resources. For example, the average cost of ERP implementation is $10.6 million and takes 24 months to complete (Summer, 2005). Research conducted by the Meta Group (Stein, 1999) also indicates that 90% of ERP projects are late or over budget. Problems with ES investment arise for a host of reasons: hardware and software may fail to meet specifications; the vendor may promise product functionality that is not deliverable; requirements can be poorly specified; operational implementation methodologies can fail and personality and political interference can come into play (Barki, Rivard et al., 1993; Keil, Cule et al., 1998; Keil and Montealegre, 2000). Given the risks, it is understandable that managers would feel uncertain about ES adoption and the subsequent exposure to public scrutiny that may result from expensive investments that may or may not achieve reliable outcomes moreover produce performance improvements.

The process of ERP adoption is one where the individual begins with innovation comprehension and then progresses through to organisation assimilation (Swanson and Ramiller, 2004). In order to deliver reliable innovation outcomes the organisation must make a number of key strategic decisions encompassing the adoption, implementation and assimilation stages. These decisions comprise choosing the right system and the right system scope (know-why); and choosing the right implementation strategy (know-how). Yet, is by no means clear that managers engage in a deliberate
and considered way when making decisions about whether, when and how to invest in IT programs (Swanson and Wang, 2005; Coltman and Dolnicar, 2006).

In this paper we explore this issue by investigating the decision to invest in ERP software throughout a large manufacturing organisation. We begin with a higher order conceptual framework that enables us to examine the complex decision making processes involved in the innovation process. Particular attention is focussed on those innovation processes, informed by adoption know-why and implementation know-how. The methodologies used to capture the data for this case study are discussed before presenting our preliminary findings.

2. MINDFUL IT ADOPTION

The study draws on the concepts of organisation mindfulness, sense-making and enactment as proposed by Weick (1995), Daneels (2003) and Swanson et. al (1995; 2005). This conceptual work provides a novel and more complete theoretical framework to understand ES adoption processes and outcomes. Essentially these theories suggest that reliable performance outcomes can be attributed to how managers think; how they gather information and how they perceive the external environment. Yet, one of the most consistent findings emerging from organisational decision research is that people have very little time for problem solving and when they do undertake these activities, they tend to display considerable irrationality (Brunsson, 1985). They make inferential errors, create myths to account for uncertainty, and are resistant to feedback (March, 1991). In other words, scant reasoning may characterize IT related investments such as ERP—with subsequent implications for firm performance. We see evidence of this in the work by Swanson and Ramiller (2004) where they suggest that “mindful and mindless” behaviour tends to characterise IT investment decisions.

2.1 Capturing Mindfulness

Mindful and mindless behaviour is a way of working that is grounded in the minds of participating individuals (managers) through a process of heedful interrelating (Weick and Roberts, 1993). In the case of ERP investment decisions, heedful interrelating arises as managers interpret and act upon a model of a changing environment and organizational situation: how they gather information; how they perceive the world around them; and whether they are able to change their perspective to reflect the situation at hand (Langer, 1989). Mindfulness is “manifested in active information processing, characterised by the creation and refinement of categories and distinctions and the awareness of multiple perspectives” (Fiol and O'Connor, 2003: 59).

In terms of IT adoption, mindfulness is a novel approach to understanding how organisations make sense of IT innovation. Swanson and Ramiller (2004) conceptualise the process of IT innovation as having 4 phases: comprehension, adoption, implementation and assimilation. Managers are faced with key decisions at each phase, which become interdependent due to the mental models managers have
around these processes in order to make sense of them. Research which has focused on implementation know-how as the key to innovation success has ignored the fact that if a technology is adopted for the wrong reasons the potential to gain sustainable competitive advantage is limited. Likewise, if managers are not mindful of the path dependent nature of adoption rationales their strategic reasoning becomes limited by their past decision-making. In other words, managers need to be mindful of the way they make sense of a technology. This requires one to consider the way IT fits with the current organisation vision and environment, as distinct to past patterns of organisational behaviour (Swanson and Ramillier, 2004).

2.1.1 The impact of managerial know-why and know-how on IT innovation

Swanson and Wang (2005), in a study of 118 firms, investigate adoption know-why and implementation know-how. Their research found that strategic reasoning (know-why) is important to the outcomes of the organisation during IT adoption. However, empirical justification for this obvious finding has received very little empirical attention. To date, research in the strategy field has relied on contextual factors, such as organisation size to determine performance success. Furthermore, Swanson and Wang’s study suggests that implementation know-how by itself does not necessarily lead to innovation success. Additionally having know-how does not necessarily mean the organisation has a solid business rationale for adoption in the first place. What Swanson and Wang’s study found was that business coordination (the ability to better communication across departments and enterprise-wide, with customers and suppliers), was a key know-why factor in innovation success. However, the research was limited in that they did not observe directly the adoption and implementation processes, nor did they gather the perceptions of managers at different levels in the organisation, relying solely on the CIO for the judgemental data. Lastly the research was conducted during the 1990’s and as such could be considered an historical case, set in a period, prior to the 2000 era of the dot.com bust.

2.2 The Enactment Process: Conceptualising the Decision-Making Process

Hambrick and Mason (1984) recognised that organisational outcomes may well be a reflection of bounded rational cognitions of the “powerful actors in the organisation” (p193). Our research also recognises that we cannot operate under the assumption that organisations are entirely purposeful entities especially when it comes to strategic decision-making.

However, the strategy literature has tended to ignore the mental models managers have about their organization, relying on a rational view of organisation behaviour to determine organisation outcomes. The assumption is that managers behave as rational actors (Johnson and Hoopes, 2003). Under this premise–dominated by an economic perspective on strategy–managers are seen as “rational utility maximisers” (Stubbart, 1989). This view ignores the role managers’ play in determining strategic choice and resulting firm performance levels (Hambrick and Mason, 1984). Thus, organisation research needs to focus on the dominant coalition of an organisation, or to be more specific its top
managers. By focusing on top managers, we can determine organisational action as a function of the capacities of specific individuals (Miller, Kets De Vries et al., 1982). Not only do we need to focus on top managers, we need to uncover how managerial perceptions inform adoption know-why and implementation know-how because the process of strategic reasoning is driven by the mental models managers create about an IT innovation.

2.3 Conceptual Framework

The enactment framework provides a comprehensive process through which one can examine both the adoption know-why and implementation know-how. Daneels (2003) work conceptualises the process of enactment as a cyclical process of interaction with customers, or in this case the process of firm interactions leading to ES adoption and implementation (see Figure 1). The model represents an ‘information processing sequence in which individuals attend to cues in their environment, interpret the meanings of such cues and externalise these interpretations through concrete activities’ (Porac, Thomas et al., 1989:398).

![Figure 1: Enactment Framework as Applied to the ES Adoption Process](image)

Our research argues that firms build knowledge and form mental models about IT innovations through internal and external environmental pressures, such as their experiences with the innovation in the past and the experiences of firms external to them (e.g. press around large IT failures and bandwagon behaviour), they interpret this information (forming mental models and adoption know-why), make current implementation decisions and also future innovation choices (evaluating the fit of future technologies).

In this context then for an organisation seeking reliable outcomes from IT adoption, mindfulness concerns managing expectations in dynamic, unpredictable environments, so that managers should
continuously scrutinise expectations and adjust according to a process of continual learning (Weick and Sutcliffe, 2001).

Using the enactment framework the research examines how managers perceive the environmental cues which drive their decision to adopt an enterprise system. We also examine what drives the decision to adopt implementation strategies and how the outcomes of previous technology investments have impacted on the current and future adoption processes. For example, we demonstrate how negative investment experiences have impacted on current ERP adoption. We also examine whether managers have made mindful decisions and the impact of this on the outcomes of the innovation process.

3. METHODOLOGY

The research employs a single case study of the largest ever single ERP roll-out in Australia, to date. The study’s focus is a complex set of strategic decisions, made at different levels of the organisation, which are clearly contextually bound. With that in mind a case study approach allows us to cover the contextual conditions of the decisions made, while at the same time develop a deep understanding of the making process.

Swanson and Ramiller (2004) have suggested that because “context matters in rendering judgments” (p559) a case study is the best methodology to examine contextual based effects of IT decision making. Furthermore, Fiol and Conner (2003) argue that mindful decision making involves making strategic choices which best fit the specific organisation circumstance, rather than familiar behaviours based on what others are doing.

A case study methodology is further justified by (Yin 1994: 7), who purports that why and how questions are suited to a case study methodology because “these questions deal with operational links [that need] to be traced over time”. The organisational case study will allow us to “…probe both the know-why brought to bear on adoption and the know-how brought to bear on implementation and assimilation, as well as the interplay between both forms of knowledge” (Swanson and Wang, 2005, p29).

3.1 A Multi-Level Embedded Case Study Design

The case study has an embedded design based around data collection from the different decision-making teams at different levels in the organisation (see Figure 2), thus employing a multi-level analysis within a single study (Eisenhardt, 1989). These groups played different roles corresponding to the phases of the ERP adoption, from comprehension through to assimilation.

A triangulated approach to data collection provides the case study with an ability to ‘substantiate constructs’ (Eisenhardt, 1989: 538). The case study will use qualitative methods, mainly in-depth interviews and quantitative methods, best-worst analysis, to collect and analyse data.
This combination of research methods will allow us to both describe the relationship between the strategic decisions made at different stages of the ERP project (comprehension, adoption, implementation and assimilation), determine whether mindful decision-making has impacted on the project outcomes and start to explain the drivers of the decisions at different stages, with a view to being able to predict project outcomes (a future research initiative).

**Figure 2: ERP Project Structure**

3.1.1 Qualitative approach: phase 1

To gather rich descriptive information on the adoption process we use convergent interview techniques. Convergent interviewing combines the advantages of unstructured and structured interviews. It does this by leaving the content unstructured (i.e. not asking a predefined set of questions) but uses a tight structure to collect the information, through systematic sampling, data collection and interpretation (Dick, 1998).

To further bolster the case study findings multiple investigators are used to conduct the in-depth interviews. As Eisenhardt (1989) suggests the use of multiple investigators serves two purposes. The first purpose is to enhance data richness and the likelihood of novel insights through complementary insights. The second is to increase the confidence in the findings, through convergence of observations and the possibility of conflicting views. In practice this has been carried out through pairs of researchers making visits to the case study sight. Each researcher writes notes on the respondents and
observes body language and these notes are then compared post interview. Field notes are also being kept which will help in the analysis stage where they can be used to shape the semantic mapping.

All ERP decision-making constructs have been identified from the literature and pilot interviews conducted prior to data collection, to help drive the data collection. This method was used by Bourgeois and Eisenhardt (1988) in their study of top management team strategic decision-making. However, it is important to note that part of this phase of the research emphasises finding novel and unforeseen constructs, given the unique context of the study and the novel theoretical framework being applied (Eisenhardt, 1989). The convergent interview technique discussed emphasises the focus on capturing unforeseen concepts.

The next stage of the qualitative phase will use content analysis to develop semantic maps of the decisions that individuals and teams have made at different phases of the process.

3.1.1.1 Cognitive Mapping

Cognitive mapping techniques, namely semantic mapping, is used to elicit individual beliefs or mental models regarding the ERP adoption process in phase 1. Cognitive mapping techniques have been applied in strategic management settings to explore managerial cognition (Siau and Xin, 2005). Cognitive mapping was developed by Toleman (1948) a researcher in psychology, to describe an individual’s internal mental representation of concepts and their relationship. Substantial research using cognitive mapping to explore managerial cognition, highlights the technique as an effective way to understand managerial judgment (for e.g. Huff, 1990; Fiol and Huff, 1992; Walsh, 1995). The maps provide a graphical representation of respondents’ mental models, which allow researchers to: 1) elicit concepts; 2) refine concepts; and 3) identify relationships between concepts.

This research uses semantic mapping to explore the concepts surrounding managerial decision-making, without superimposing structures (Buzan, 1993). The in-depth interview transcripts are analysed using content analysis software called Leximancer© to create the semantic concept maps. This allows us to examine both salient concepts and the relationships between concepts. Leximancer© software is used to ensure consistent coding of the interview transcripts, which will lead to a more reliable construct derivation (Weber, 1990).

3.1.2 Quantitative approach: phase 2

The outcome of the content analysis provides a better defined list of constructs but is still not clear how much weight should be given to the different factors involved in decision making. One of the biggest challenges in determining the relative importance of a set of factors across individuals is the existence of scalar inequivalence (Cohen, 2003). Scalar inequivalence arises primarily because of differences in response styles which are defined as “tendencies to respond systematically to questionnaire items on some basis other than what the times were specifically designed to measure” (Paulhus, 1991: 17). To overcome this problem the best-worst scaling (BWS) approach is used. BWS
is a multiple-choice extension of the paired comparison approach that is scale-free and forces respondents to make a discriminating choice among the factors under consideration.

BWS is a fairly general scaling method that extends Thurstone’s (1927) Random Utility Theory-to judgments of the largest/smallest, best/worst, most/least etc. items, objects or cues. Specifically, the BWS assumes that there is some underlying subjective dimension, such as “degree of importance”, “degree of concern”, “degree of interest” etc. and the researcher wishes to measure the location or position of some set of objects, factors etc. on that underlying dimension. Thus, the scales derived from BWS are those that best satisfy a theory about the way in which individuals make best-worst judgments (Marley and Louviere, 2005). This allows us to determine the preference ordering of a large number of attributes associated with the ERP project decisions.

3.2 An Outline of the Case of a Manufacturing Company Innovating with ERP

In 2002, an Australian division (called division A for anonymity) of a large manufacturing organisation began a preliminary investigation of ways to replace their legacy systems with a comprehensive ERP system. At this time, the company was watching a Moovex implementation go horribly wrong in Asia—another organisation division. Coupled with this were concerns over profit warnings and the ongoing struggles of other organisations dealing with ERP failures. This created a very risky environment for the organisation’s executive team who were acutely aware of the problems any negative press regarding an ERP botch up would cause them. Perhaps not surprisingly, the project was put on the backburner.

Whilst division A had been initiating ERP discussions so too was the industrial markets division (made up of an Australian business unit (hereon in unit B) and a NZ unit). The business started an initiative called Project Wyatt (which later became 1SAP) to create an integrated ERP system across the various strategic business units and divisions. External partners and business consultants, such as Accenture and CSC were brought into the process to help capture business and system requirements. Two software packages, SAP (Release 3) and Moovex ERP were reviewed for their fit with the Industrial Markets unit. During initial reviews it soon became obvious to the TMT that Moovex was a 3rd tier system, suited to mid-range organisations, much along the lines of the Asian installation. SAP had stronger capabilities in the business unit’s key markets and already had a small footprint in division A and a large footprint in unit B who had already implemented SAP Release 2.

At the time of the Project Wyatt investigation a new CEO joined the organisation. The CEO baulked at cost approximations for project Wyatt (somewhere around $80 million). The organisation had just finished acquiring a U.S company, had recently moved into the Asian market and was interested in spending money on capital equipment not IT. Needless to say project Wyatt again stalled in Australia.

It was at this time that New Zealand unit saw an opportunity to take up the ERP project. The business case for NZ was very strong coupled with the fact that the NZ implementation would be much smaller
than their Australian counterparts. They were running with legacy systems, some departments were soon to be closed and they had endured in the past, unpredictable business performance. The environment for NZ, coupled with a lower budget approval, meant they could get the go ahead from the executive. The implementation at NZ signalled to the other business units that ERP upgrades may be possible across the board and the ISAP project was borne (a reincarnation of project Wyatt which had previously been canned).

In 2004, Australia once again initiated a comprehensive risk review. The objective was to report to the Senior Leadership Team at unit B of any inherent risk associated with their aging software (i.e., SAP Release 2). The core problem was that SAP had warned unit B that support for R2 would cease in December 2004. The team had to go through extensive processes in order to gain management support for a system upgrade to R3. The organisation design and culture made this process more difficult. The business had introduced a new governance concept coined ‘syndication’ that sought to introduce a structure of decision by consensus. The effect of this new method of governance was that all decisions whether large strategic decisions or tiny design issues must endure arduous consensus based decision-making processes.

The working committee which was formed to conduct the project pre-feasibility and feasibility studies endured the bureaucratic process and eventually garnered management support, using a risk mitigation argument. The fact that NZ had just implemented a SAP system provided a convenient platform for unit B to leverage off. Essentially the NZ project became a pilot test for unit B, who implemented a NZ equivalent in their own business unit. The fact that senior organisation and unit B managers had seen the overall success of NZ, helped the working committee garner necessary executive level support.

As a standalone ERP implementation the unit B project was very successful. It is a rare that such a large project involving 2000 users, 70 interfaces with other systems, interstate users and the largest organisation business unit can proclaim such success. A lot of the success of unit B has also been attributed to the front-end loading that took place before the project sign off occurred (developing know-why for adoption). Approximately 1/3 of the total budget was assigned to the pre-feasibility and feasibility stages of the project, to ensure a full evaluation of options and the creation of system prototypes to enable a good organisation fit. Furthermore, the success can also be attributed to effective change management and operational support. Essentially the unit had great implementation know-how from past implementations in unit B and other business units. People involved in these past projects were brought in on the R3 project.

Since the NZ and unit B implementations the ISAP program is continuing in its bid to standardise business processes and practice across the plants. The vision is to remove ‘the islands of responsibility’ currently evident in maintenance for example and improved business coordination.
However the 1SAP program, which aims to get all business units on the same system, has not been successful. They are yet to be able to get the division A project off the ground-in terms of gaining management support.

3.2.1 Preliminary discussion applying the case to the enactment framework

It is evident from the case study that internal and external pressures on the organisation influence the way executives comprehend ERP in their organisation. As a whole, the organisation perceived ERP as a risky endeavour. This was understandable given the high rates of ERP failure reported in the popular press and the internal failures that had plagued the company over many years. In terms of adoption know-why, the working committee had a huge job on their hands in overcoming some of the executive perceptions around ERP technology. For instance, avoidance and risk aversion mentalities were well entrenched in the organisation. We see evidence of this in the reluctance by particular senior executives to accept the inherent risk of staying with an unsupported system and persevering with unreliable contract support.

3.2.2 1SAP: know-why

According to Swanson and Wang (2005) business benefits should provide the framework for constructing and articulating an organisation’s adoption know-why. Hence, senior management perceptions of the business benefits attainable are critical to IT investment.

In the beginning, it was obvious that senior management had difficulties seeing any real business benefits in innovating with ERP. One of the main reasons for this was that they were used to investing in plant equipment and constructing engineering systems that produced tangible output and were connected to their core business activities. According to the I/S Manager “the senior view is that I/S isn’t about making [our products]. They thought we should be able to employ contactors who knew about R2...the problem with I/S is that you can’t see it [wear].”

In fact the organisation’s senior executives were content with being followers not leaders in ERP, waiting essentially for the technology to be thrust upon them, as a senior VP stated “let someone else go first” and “if the systems still running why change.” It actually took a formal letter from SAP telling business unit B that support would cease, to convince them the upgrade was necessary.

As Swanson and Ramiller (2004) suggest mindless decisions are a result of organisations paying little attention to this early stage of technology comprehension, particularly the case where an organisation believes IT is not critical to the business. When mindless organisations adopt ERP packages they often rely on the dominant vendor and follow a ‘best practice’ standard of implementing a vanilla system.

Mindless decision-making is certainly existent in the case presented, where the organisation was content to follow preserved organisation routines, based on prior experience with engineering system projects. Furthermore, unit B implemented a vanilla SAP system highlighting again the point that
their decision to adopt ERP was not driven by attention to organisational specifics or distinctive competencies. In fact the process of strategic reasoning was based around principles which drive the entire organisation’s capital investment management process. An extensive time period and budget (approximately 1/3 of total costs) was spent on the pre-feasibility and feasibility stages of the project, which the organisation has coined as front-end loading. A senior consultant claimed that the investment management process was designed for engineering style projects and does not fit with ERP projects. The problem occurring with front-end loading, in both unit B and currently with division A, is knowing when to stop the design process and ask for more funds, “[this process] is not something other organisations do...how far do you go into your design before you stop and reassess” (Senior Accenture Consultant).

Whilst the focus on risk avoidance, through extensive front-end loading, shows evidence of mindfulness, the organisation’s inability to acknowledge that trade-offs need to be made between schedule, budget and delivered functionality, imparts a sense of mindlessness. Swanson and Ramiller (2004) claim that the mindful organisation favours improvisation over planning and adaptation over routine, in order to remain resilient to the likelihood that when innovating with any form of IT, realised strategies will be departed from initial strategic planning. To a large extent this was not the case with the unit B project, whereby routines and past patterns of behaviour were closely followed and relied upon. Consultants working on the project indicate that the decision making by syndication process the organisation has deployed to insure them against all risk, meant the approval process was “dragged out [wasting] a lot of time and dollars”. The executive team were not willing to be mindful of the fact that flexibility needs to be exercised for decisions of different consequences- on the contrary they applied the same framework to high level adoption decisions, such as scope choice as well as very minor design issues. In terms of being opportunistic and learning from the process, division A’s current inability to get past the front-end loading stages, suggests otherwise. This could be the case of the organisation taking a very narrow view of the 1SAP project, believing that because unit B was successful as a standalone project they can continue following the same processes for future initiatives. The organisation does not recognise that to innovate mindfully, a trade-off needs to be made between acknowledging the inherent risks of ERP projects and being able to relax formal structures to ensure action, in terms of rolling out the 1SAP project.

To further complicate the enterprise wide 1SAP project, the organisation governance structure is federated. In other words the strategic business units can agree in principal to be involved in the project, but at a business unit level they still have the final say. Thus not only does the 1SAP program need to gain the executive leadership team’s (ELT) support they need to gain the support of the senior leadership team (SLT) in each business unit. Due to the syndication process, if one of the SLT’s disagrees with the project scope and budget the ELT will not move forward. The impact of this is visible by the time that it took to get the executive team on board. In fact, it has taken business unit B,
4-5 times longer to adopt and implement an off-the-shelf ERP package than it has other successful organisations—innovating with the same technology enterprise wide—such as BHP Billiton and BP (Senior Accenture Consultant).

This decision making governance structure imposes problems on getting commitment from executives and has served to stall the 1SAP project. Again in this instance it appears that the organisation is acting in a mindless fashion, in that they are not able or willing to relax formal structures so that the authority for actions can flow. This is despite the adoption rationale being accepted across other strategic business units. The problem stems from a decentralised structure which makes it extremely hard for the project team to gain top management support. This presents risk to the organisation in terms of their 1SAP projects because a lack of managerial support may compromise the technologies successful assimilation enterprise wide. In fact a senior Accenture partner who has years of experience with SAP projects highlighted this point, stating that the two areas which are the key to reliable outcomes are senior management support and change management support, “these are the areas where things go really well or really badly.” In companies which have been successful in assimilating ERP enterprise wide, the CIO has the power to make strategic investment decisions. Conversely, it is evident that in this organisation the power for strategic planning lies in each of the business unit managers who report directly to the CEO.

Part of the problem of gaining executive level buy-in is that there are no organisation incentives to get involved. Their performance is measured by sales throughput and volumes, not IT projects. They lack the knowledge or vision to understand the serious business impact that systems like ERP can have. The lack of business value placed on IT in the organisation is demonstrated by the fact that IT has no decision-making power or budget, because the power lies in the business unit. A consultant working on the project provides a great example of this problem: “The CFO was a big supporter to the CIO in the Industrial Markets unit and of the ERP project...when the CFO changed roles and went to a new strategic business unit, they no longer supported the project because there was no incentive-their shares and remuneration were tied to their business unit.”

3.2.3 1SAP: know-how

As a relatively late adopter of ERP systems the organisation has benefited from the rich resources which now exist around how to implement ERP systems (Swanson, 2003). Part of the reasoning which took place at the adoption stage seemed to have stemmed from management understanding of the difficulties associated with implementing ERP systems. The organisation benefited from the lessons learned from other ERP project disasters and took on board the risks associated with such projects. In that case a limited project scope (i.e. a limited number of SAP modules were selected) bound the project which eased the minds of the executives who were very happy to avoid any risks of failure.
The organisation’s SLT were also mindful of the need to obtain external expertise in the form of consultants who had long standing experience with SAP implementations. They could also re-use employees who had worked on similar implementations in the other business units. For example unit B used employees who had worked on the NZ project.

In terms of assimilation unit B has been somewhat successful, as a standalone implementation. Extensive efforts were made to get business buy-in and involve different departments in the creation of power users who would help get all users on board. In this phase the culture of the organisation has presented some problems. Some department level managers were sceptical about the project and as such were not happy about their employees being removed to work on the project. In order for the project to be successfully assimilated the project team needed people who were fully dedicated to act as system champions. Due to the lack of support at a department level, the power users were not willing to dedicate 100% of their time to the project. This was due to the fact that their managers did not see the benefit in the system, and the power users felt they were jeopardising their future opportunities by being removed from their business unit. Unit B should have been mindful of the need to give authority to the project team or deliver stronger directives from an executive level in order to ensure successful assimilation.

Whilst the unit B implementation has been successful and the change management approaches have helped assimilation to some extent (the Valley of Despair - an Accenture Concept to conceptualise productivity drops after go-live has been minimal), the adoption of ERP by other business units has not picked up. The success of the ISAP project clearly lies in adoption know-why, in terms of the business benefits of adoption being perceived by the ELT as worthwhile to the organisation.

It is clear from the preliminary case study findings that adoption know-why and implementation know-how both have degrees of impact on the outcomes of an ERP project. As a standalone project unit B has achieved successful outcomes, delivering the project on-time and on budget, a lot of which has come down to implementation know-how. However, taking an enterprise wide perspective the organisation’s ERP innovation has been less successful, due to the mindless decision making that has occurred. As Swanson and Wang (2005) demonstrate just because an organisation has implementation know-how does not guarantee the success of the project. What matters is that organisations are adopting such systems guided by the right business rationales. In other words the organisation needs to be more mindful in its comprehension and adoption of ERP systems.

The next stage of the research will uncover managerial preference for the attributes driving these important strategic decisions. The purpose of this stage of research is to develop a framework of constructs and their relationships, in order to better understand the factors which are driving adoption know-why and implementation know-how and their associated weightings. The future application is being able to predict outcomes of the adoption process, given certain managerial preferences. The
work has relevance to industry because it will highlight how managerial beliefs (formed through experiences, roles and bias) are affecting their large-scale technology investments and as such the research will help organisations to better manage the process of innovation from comprehension through to assimilation, ensuring reliable outcomes.

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