2012

A systemic semiotic analysis of cultural differences between Australian and Saudi ebusiness websites

Mohammed Abdulaziz AI Mansour
University of Wollongong

A Systemic Semiotic Analysis of Cultural Differences between Australian and Saudi eBusiness Websites

by

Mohammed Abdulaziz A AI Mansour

Submitted in partial fulfilment for the award of

Doctor of Philosophy

from the

University of Wollongong

School of Management and Marketing
2012

Certification

I, Mohammed Abdulaziz A AI Mansour, declare that this thesis, submitted in fulfilment of the requirements for the award of Doctor of Philosophy, in the School of Management and Marketing, University of Wollongong, is wholly my own work unless otherwise referenced or acknowledged. The document has not been submitted for qualifications at any other academic institution.

Mohammed Abdulaziz A AI Mansour

4 October, 2012

Table of Contents

Chapter 1: Introduction

Chapter 2: Communication Technology, Web Communication and Culture

Chapter 3: Theoretical Foundations

Chapter 4: Systemic Semiotic Web Systems Methodological Framework

Chapter 5: Comparison and Evaluation

Chapter 6: Conclusions and Further Research

Appendices

List of Figures

List of Tables

CHAPTER ONE

Introduction

"Chance only favors invention for minds which are prepared for discoveries by patient study and persevering efforts" Louis Pasteur

1.1 Background to the Research

The prevailing approach to the study of technology-mediated communication and culture within the information systems and marketing literature has been the utilisation of the work of Hofstede (1980) and Hall (1976). Hofstede's (1980) work provides a set of cultural dimensions that can be used to distinguish different cultural value systems from each other (power distance, uncertainty avoidance, masculinity/femininity and individualism/collectivism). This work had been developed primarily to account for national identity and intercultural differences in face-to-face communications within organisations but has been extensively used to account for cultural differences in technology mediated marketing communication, despite the fact that there are real concerns about its applicability to online situations. On the other hand, Hall's (1976) intercultural communication theory suggests ways in which people within a culture may interact with each other by identifying contextual components that are important in individual-to-individual communication within a culture. Interestingly, this is not actually the work for which Hall - a cultural anthropologist - is best known (see discussions of Hall's work concerning the semiotics of space and time by Nöth (1990, p.410)). Together, Hofstede and Hall have provided a useful foundation approach for conducting web system localisation, generally implemented as a content analysis of cultural values. However, this narrowly circumscribed theory fails to provide a link between culture and communication.

Whilst we have seen a range of studies suggesting the need for *cultural awareness* and *sensitivity to other cultures* in relation to technology use, adoption and presumably its development by organisations (Zakaria et al., 2003), there has been really very little work suggesting ways in which this might be identified, let alone promoted. It is possible although unusual, to encounter individuals that are raised in two cultures and fluent in both, but when we talk about the development of technologies like web systems, we are claiming that messages or utterances produced by one party can be understood by another from a different culture without ambiguity as if both were of the same culture. Understanding the existence of cultural differences in the age of the Internet is extremely important in the development of global electronic business.

1.2 Motivation for the Research

The global reach of the Internet highlights important issues around cross-cultural suitability (Al-Badi and Mayhew, 2010). A large number of existing studies emanating from a range of disciplines (Information Systems (IS), Computer Mediated Communication (CMC), Marketing and Advertising) support the notion that communication style, which is affected by cultural values and characteristics is important on the Web (see for example, Baack and Singh, 2007; Zakoria et al., 2003; Singh et al., 2005; Hermeking, 2006; Gould et al., 2000; Marcus and Gould, 2000; Aladwani, 2001, Davidson, 1999).

Culture has been defined as the "human-made part of the environment" (Herskovitis, 1955). According to Geert Hofstede (1973), culture is a process of how individuals communicate, propagate and develop understanding about views on life. Culture is the frame of

understanding wherein humans decipher their involvement and steer their actions, however, people within cultures do not all have the same understanding of values, cultural norms and conventions, rather each culture comprises a diverse range of these elements. Common cultural values reflect multifaceted patterns for social interaction and exchange (Adler, 2001).

A large body of research suggests that cultural values impact the use of communication artifacts and technologies within a society (see for instance, Adler, 2001; Fischer, 1992; Marcus, 2001). These studies generally confirm the requirement for *cultural awareness* and *sensitivity* to ways technology impacts the uptake and use of new technologies (Zakoria et al., 2003). Zakoria, Stanton and Sarker-Barney (2003), also stress the need for *cultural awareness* and *sensitivity* around the way culture impacts the uptake of new technologies, in particular, more recent types of Internet-based communication technology. They argue that there are key variances in the way humans deal with, share and assess information and therefore, *think globally, act locally* appears relevant to the growth of culturally sensitive information technology (IT). The authors fail to elaborate on what "cultural sensitivity" actually means, other than to suggest that preferred modes of communication and cultural values are important elements to consider. Precisely what does it mean when web systems theorists and practitioners advise *cultural sensitivity*? The term itself is revealing. What lies behind calls for *cultural sensitivity* is that cultural differences can be overcome if we are just simply more aware of them - this is actually an essentialist position that culture differences are more about degree than about kind. Another disturbing aspect of considering another's culture to be something to be overcome with more *sensitivity* is that it is both patronising to that culture and its members at the same time as it is self-congratulatory for those who make these types of judgments. What chance of success does any development practice actually have that relies on developers being just more *sensitive* and *aware*?

1.3 Justification for the Research

Specific cultures consist of a multitude of generally assumed or taken-for-granted differences, and where there are differences there is choice and where there is choice there is meaning (Eggins, 2004:3). Cultures are also all-embracing in that there is no privileged position from where any person can be said to be independent of their culture. Nor is there any position outside of culture where one may objectively judge another's culture. Culture affects every facet of our lives. Communication theory that underpins most work in this area as well as most commerce and informatics-related disciplines, relies largely on the so-called (information) transmission model of communication (Shannon and Weaver, 1949). What is needed are new ways of understanding marketing messages as communication in cultural settings. Web development practices also need to be created and applied to consider communication in cultural contexts. This thesis suggests that the standpoint from which to develop an appropriate view of communication is from a cultural perspective. To this end, it will establish the parameters of its replacement by trying to consider what the received literature negates, and then using these as the point of departure for a new approach that considers web systems development and, more importantly here, its use as communication in cultural contexts; one that recognises the range, extent and depth of cultural differences.

1.4 Aim of the Research

The primary aim of this research is to propose new ways of understanding web systems and their marketing messages as *communication* in context, in order to develop better analytic frameworks for developers creating international e-business websites.

The study utilises a convenience sample of western (Australian) and middle eastern (Saudi Arabian) e-business websites to compare and contrast marketing communication design, wireframes and components, situational context, page composition and semantics, content organization schemes, images, image-text relationships, symbols and global navigation to determine cross-cultural applicability and effectiveness. From this, a Systemic Semiotic Web System Methodological (SSWSM) Framework is proposed.

The study brings together, synthesizes and builds on existing bodies of literature from Information Systems (Web Systems Development) and International Marketing (cross-cultural Marketing and Advertising) in order to address the following research questions:

1. Are there detectable cultural differences in international e-business websites?
2. How can these differences be detected?
3. What methods/frameworks currently exist to account for cultural differences in e-business websites?
4. Are there better ways of accounting for these differences?

1.5 Approach and Methods

To analyse marketing messages on e-business websites requires methods that allow an understanding of the situational and cultural contexts in which these messages are produced and consumed. There is also a need to understand the semantics or meanings of these marketing messages. A social semiotic approach is applied to understand how marketing messages are structured, and can be structured on e-business websites in different cultures. A convenience sample of 20 (each) Saudi and Australian websites were utilized in the study. The websites were chosen from a range of businesses according to the Australian Bureau of Statistics business category scheme: Banking and Insurance; Telecommunications; Food; Transportation; Energy and Other. Each of the websites were analysed individually using the Systemic Semiotic Web System Methodological (SSWSM) Framework proposed in this study. The results of the analysis of the Saudi and Australian websites were then compared and contrasted in order to detect cultural differences in marketing communications on the e-business websites across the two cultures.

1.6 Contributions to Knowledge

1.6.1 Theoretical Contributions

This thesis provides a number of theoretical contributions specifically related to the identification of requirements of an appropriate theorisation of cultural differences in web systems (TI), the specification of a novel class of theorization for accessing cultural differences on the web (T2), establishing the need for approaches that support multiple contexts of culture and situation (T3) and finally, identifying which modalities provide the best opportunity for identifying cultural differences on the Web (T4). For an elaboration of the theoretical contributions of this thesis see Chapter 6, Table 6.2.

1.6.2 Methodological Contributions

There are a number of methodological contributions arising from the application of methods based on a theory not previously applied to this domain. These contributions involve a new unit of analysis (M1); identifying and mapping systems methods to particular Web resources (M2); development of a Systemic Semiotic Web System Methodological (SSWSM) Framework (M3); redaction of situational context methods (M4); methods to modify and extend methods developed for text analysis to other media modalities (M5 and M6); application of compositional semantics to webpage layout (M7); application of image analysis techniques to multimodal texts (web pages) (M8); modification/application of Image-Text analysis to multimodal texts (web pages) (M9); application of system networks to describe global navigation systems (M10) and development of methods for comparing system networks (M11). For a more in depth discussion of the methodological contributions see Chapter 6, Table 6.3.

1.6.3 Substantive Contribution

There is ample evidence suggesting cultural differences between Australian and Saudi Arabian e-business websites emerging from this thesis. These include the field and tenor relations, specific representations of males, females and children, dress codes and symbols of nationality, and the use of explicitly religious components in web page design (see Chapter 5 for an in depth discussion of these contributions). Primarily, these cultural differences are being identified through an analysis of situational context as well as by image analysis. The substantive differences are detailed in Chapter 6, Table 6.4, and are arranged into two groups (i) evidence for cultural differences and (ii) the semantic description of Australian and Saudi Arabian e-business websites.

1.7 Definition of Key Terminology

Culture: a way individuals interact, propagate and advance their understanding of attitudes towards life (Hofstede, 1973).

Communication: The sharing of thoughts, information and messages through written and oral forms of exchange, signals, and conduct

e-business: the buying and selling of goods and services on the Internet or other computer network

Marketing Communications: are messages and related media used to communicate with a market.

Semiotics *:* the science of the life of signs in society.

Social semiotics -*:* a particular orientation to the theory and practice of semiotics that attempts to move "beyond its idealistic foundations as the 'science of signs' … to a social and political intervention in these [organizational] practices as practices" (Thibault, 1991:3).

Systemic Functional Linguistics (SFL) - a semiotic and functional model of language concerned with the communicative and social aspects of language use. It is also a contextual model of language because SFL has an explicit theory of context based on work of Malinowski (1923).

Systemic semiotics is a composite of social semiotics and systemic functional linguistics.

1.8 Structure of the Thesis

This thesis is organized into six chapters.

Chapter 1 - introduces the study and motivation for the research. The aim and questions addressed by the research is then introduced. The chapter also provides an overview of the theoretical, practical and substantive contributions of the thesis.

Chapter 2 - presents a review of existing research emanating from information systems and international marketing on Web communication and culture.

Chapter 3 - presents and discusses the theoretical foundations within which the study is framed.

Chapter 4 - describes the approach taken and methods employed in this research program and the development of the SSWSM Framework

Chapter 5 - provides a discussion on the results of an evaluation and comparison of both Australian and Saudi e-business websites. The purpose of the evaluation and comparison is to detect cultural differences evident on the sites.

Chapter 6 - concludes the thesis by summarizing the key findings from the research and discusses the implications for academia and practice. The limitations of the study are also discussed along with suggestions for future research.

1.9 Summary

This chapter has provided an overview of the research topic in terms of background, motivation, justification and aim of the research. It also briefly considered the approach and methods to be used in this thesis and described the contributions which might flow from the thesis. Some examples of key terminology and a structure for the document are also provided. The following chapter will

specifically concentrate on the existing research literature concerning web communication and culture as it is represented in information systems and international marketing.

CHAPTER TWO

Communication Technology, World Wide Web Communication and Culture

2.1 Introduction

The prevailing approach to the study of technology-mediated communication and culture within the information systems and marketing literature has been the utilisation of the work of Hofstede (1980) and Hall (1976). Hofstede's (1980) work provides a set of cultural dimensions that can be used to distinguish different cultural value systems from each other (power distance, uncertainty avoidance, masculinity/femininity and individualism/collectivism). This work had been developed primarily to account for national identity and intercultural differences in face-to-face communications within organisations but has been extensively used to account for cultural differences in technology mediated marketing communication, despite the fact that there are real concerns about its applicability to online situations. On the other hand, Hall's (1976) intercultural communication theory suggests ways in which individuals communicate with other members of the same culture by identifying relative elements that are important in inter-personal communication within that cultural context. Interestingly, this is not actually the work for which Hall - a cultural anthropologist - is best known (see discussions of Hall's work concerning the semiotics of space and time by Nöth (1990:410)). Together Hofstede and Hall have provided a useful foundation approach for conducting World Wide Web system localisation, generally implemented as a content analysis of cultural values. However, this narrowly circumscribed theory fails to provide a link between culture and communication.

Whilst there are a number of studies suggesting the need for *cultural awareness* and *sensitivity to other cultures* in relation to technology use, adoption and presumably its

development by organisations (Zakaria et al., 2003), there has been really very little work suggesting ways in which this might be identified, let alone promoted. It is possible although unusual, to encounter individuals that are raised in two cultures and fluent in both, but when we talk about the development of technologies like World Wide Web systems we are claiming that messages or utterances produced by one party can be understood by another from a different culture without ambiguity as if both were of the same culture. Understanding the existence of cultural differences in the age of the Internet is extremely important in the development of global electronic business.

2.2 Culture and Communication Technology

The global reach of the Internet highlights important facts about cross-cultural correctness (Al-Badi and Mayhew, 2010). A large number of extant studies emanating from a range of disciplines (Information Systems, Computer Mediated Communication, Marketing and Advertising) support the notion that communication style, which is affected by cultural values and features, linguistic matters

is important on the World Wide Web (see for instance, Baack and Singh, 2007; Zakoria et al., 2003; Singh et al., 2005; Hermeking, 2006; Gould, et al., 2000; Marcus and Gould, 2000; Aladwani, 2001; Davidson, 1999).

Culture has been defined as the "human-made part of the environment" (Herskovitis, 1955). According to Geert Hofstede (1973), culture represents the way individuals communicate and develop their own attitudes to life. Culture represents the foundation of how individuals interpret their experience and direct their actions, however, people within cultures do not all share the same values, norms and assumptions, but rather each culture comprises a vast set of these elements.

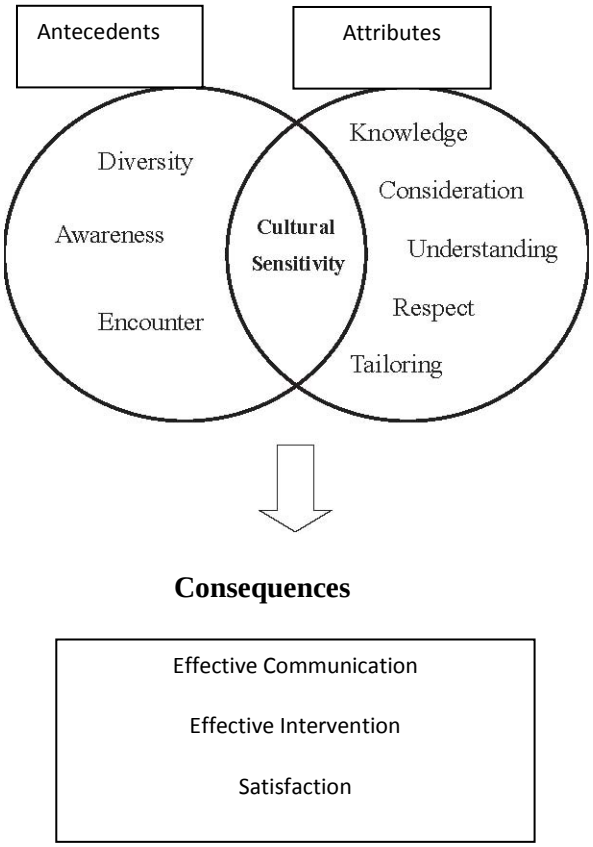
A large body of extant research suggests that cultural values impact the way technologies are utilised within societies (see for example, Adler, 2001; Fischer, 1992; Marcus, 2001). These studies generally stress the requirement for *cultural awareness* and *sensitivity* to the way technology affects the uptake and ultimate use of newer technologies (Zakoria et al., 2003). Zakoria, Stanton and Sarker-Barney (2003), stress the need to consider cultural *awareness* and *sensitivity* as well as how culture impacts the uptake of new technologies, in particular, more recent innovations of Internet-based communication technology. They argue that there are key distinctions in how people deal with and assess information and therefore, *think globally, act locally* is important to the design and development of *culturally sensitive* information technology (IT). However, the authors fail to elaborate on what "*cultural sensitivity*" actually means, other than to suggest that preferred modes of communication and cultural values are important elements to consider. But precisely what does it mean when World Wide Web systems theorists and practitioners advise *cultural sensitivity*? The term itself is revealing. What lies behind calls for *cultural sensitivity* is that cultural differences can be overcome if we are just simply more aware of them - this is actually an essentialist position that culture differences are more about degree than about kind. Another disturbing aspect of considering another's culture to be something to be overcome with more sensitivity is that it is both patronising to that culture and its members at the same time as it is self-congratulatory for those who make these types of judgements. What chance of success does any development practice actually have that relies on developers being more *sensitive* and *aware*?

One of the first attempts at uncovering the notion of *cultural sensitivity* was undertaken by Foronda (2008) (in the context of the nursing discipline), utilising a concept analysis of the term *cultural sensitivity* via an electronic search of academic and other databases for instances of the use of the term in titles of articles during the period the concept became popular from 2000-2005. According to Foronda (2008), the results of the analysis

represented in Figure 1, below, have implications for cross-cultural research not only in the nursing context, but across all disciplines.

Foronda's (2008) search results revealed five primary attributes associated with the concept. *Knowledge* of cultural nuances gained through experience of the cultures, as well as education and/or training of a culture across a range of situations. *Understanding* the importance and effects of another's experiences and/or values. *Consideration* of and caring for one's background, beliefs and language. *Respect* a willingness to show regard or appreciation of an individual's cultural values. *Tailoring* being able to alter one's own perspective in order to adapt to another individual or group's perspective.

Figure 2.1: Concept Analysis of Cultural Sensitivity (Source: Foronda, 2008:201)



In addition, a number of antecedents and consequences of *cultural sensitivity* were identified. Antecedents include *Diversity* (the differences of individuals from one another around language, culture, beliefs, religion, values, norms, attitudes, traditions and barriers); *Awareness* (the need to be aware of an individual's own culture) and *Encounter* (coming into contact with or have experience with a person of another culture). Based on this analysis, Foronda (2008:201) defines cultural sensitivity as "employing one's knowledge, consideration, understanding, respect and tailoring after realizing awareness of self and others and encountering a diverse group or individual and suggests that *cultural sensitivity* results in *effective communication*, *effective intervention* and *satisfaction"*. Although Foronda (2008) suggests that the positive outcomes of *cultural sensitivity* attest to its importance across all disciplines, a deeper understanding of the cultural implications of technologies and systems that transcend cultural boundaries remains an imperative for both theorists and practitioners alike.

In his discussion on culture and technology, Aladwani (2001) suggests that there is a link between culture and the results of the design of information technology. A drawback however, is that in relation to existing guidelines, methods and tools, most studies have been undertaken in North America and Western Europe and therefore need to be accommodated to meet the diversity of global settings (Al-Badi and Mayhew, 2010). Al-Badi and Mayhew (2010) argue that what is needed is a framework which considers challenges involved in the process of localisation to assist designers and developers better evaluate website usability. They suggest that culture-specific factors must be considered by designers to ensure acceptance by other cultures if they are aiming for successful implementation of websites outside of North America.

Straub et al. (2001) suggest that designers struggle with how technology might be adapted to different cultural contexts as those within individual cultures may perceive the value of information and technology differently. Given that culture has been conceived as a complicated and intricate construct, it is hard to understand how variants of technology and systems might appear in other cultural settings.

Clark (1987:461) argued that it is possibly more relevant to perceive culture as "a complex, multi-dimensional structure, rather than as a simple categorical variable, suggesting that it is best to array cultures along interpretable dimensions". This approach then enables an explanation of variances among cultures in their "distributions of behaviour patterns, norms, attitudes and personality variables" (Triandis, 1994:45). Clark (1987:461) goes on to stress that differences among cultures "dictate the way website content should be presented and adapted. Thus, many factors must be considered when designing a website for an international audience". The way in which websites are designed and how information is presented and arranged may "affect the users' understanding or interpretation and receptiveness to the information presented" (Clark, 1987:461).

Yeo (1996) suggested a categorisation of factors (referred to as overt and covert) impacting design of international websites. Overt factors comprise basic concrete and publicly visible factors such as "date, time, calendars, telephone number and address formats, reading and writing directions, translation, units of measure and currency" (Yeo, 1996:4). Covert factors, he suggests are less concrete and "depend on culture or special knowledge and consider graphics/visuals, colours, sound, metaphors and functionality and usually have the same meaning to members of a specific culture" (Yeo, 1996:4). For developers to successfully use covert factors in website design and development, Yeo (1996) suggests they must know and understand the users in the target culture

(Al-Badi and Mayhew, 2010). For example, colour can mean different things to people from different cultures: the colour red means happiness to the Chinese, anger/danger to Japanese and death to Egyptians. It also has implications for religion, that is, Judoe-Christian and the colours red, blue, white and gold; Islam with green and Buddism with the colour saffron yellow; (Barber and Badre, 1998).

A number of IS researchers believe that when user interfaces are considered as sets of contextual and social signals for effective use, cultural components must be embedded in their design (see for example, Gould, et al., 2000; Marcus and Gould, 2000; Aladwani, 2001; Davidson, 1999). There also appears to be strong support for the notion that IT design outcomes are closely linked to culture (Aladwani, 2001; Davidson, 1999; Harris et al., 1996) Sproull and Kiesler (1986) stress that social cues represented in non-verbal forms are imperative to good communication. Fandy (2000) suggests that much academic research into technology in the Arab cultures has concentrated on the technology, while ignoring the social implications of Arabic culture.

Research contends that successful information technology (IT) implementation is contingent on the socio-cultural setting in which it is situated. For communication technologies to function accurately, they must reflect culturally acceptable forms of communication (Kirlidog, 1996). Further, for successful deployment of new communication technologies, it must take into account *localisations* that improve the "fit" of the technology to its intended cultural context (Harris and Davidson, 1999). A key question for western (low-context) developers is how can suitable IT substitutes for face-to-face communication be developed to account for affective cultural cues for people from high-context cultures? This presents a number of key challenges. Firstly, a limited number of websites are designed with face-to-face interaction in mind; secondly, fewer are designed to enable development

of *interpersonal* relationships based on informal verbal agreements. Some believe that website design should therefore, take account of textual components that are culturally relevant, enrich language use and incorporate graphical components to deliver culturally appropriate design and symbolic information (Sanover and Porter, 1991; Gould et al., 2000).

Smith et al. (2004) suggest that it is important to be aware of and take into account demographic differences, but state that these differences are not well understood. To address this issue, they propose a *process model* for building cross-cultural websites that are user-friendly and incorporate user and expert-based tools for analysis and design of websites. The study draws some important conclusions for the development of software for international application:

1. semiotic attractors can be used both to audit sites for indigenous user requirements and to identify design solutions;

2. generic cultural factors (such as Hofstede) can make a significant and measureable contribution to website usability and acceptability. However, significant caution needs to be exercised as we have evidence that there are large differences in the importance of the individual factors. Some are significant, others are not;

3. cultural fingerprints can be used to support communication and discussions between designers, evaluators and users;

4. international evaluation strategies must include analysis of both the nature and suitability of evaluation methodology and of personnel who will be involved in it;

5. we cannot assume that Western methodologies, techniques for user centred design and participation can be used in other cultures, or within multicultural teams without adaptation (cited in Smith et al., 2004:88-89).

Zahedi et al. (2001) proposed a conceptual model for global website design by employing cultural dimensions that identify the impact of culture and individual differences in supposed value of website design based on "usability, comprehensibility, clarity and reliability" (IBM, 2004:3). Their model incorporated the cultural dimensions proposed by Hofstede (1999), incorporating the polychromic/monochromic time point-of-reference from Hall's (1983) study. According to Hall (1983), monochromic cultures have a preference for doing things one at a time, carry out tasks according to strict time schedules and strategies and are contingent on communication where much of the information is embedded in the message with plainly detailed facts. In contrast, polychromic cultures prefer to do a range of things at the same time, stress interaction with others and achievement of business instead of sticking to timetables. Polychromic cultures highlight commitment to individuals and lifelong associations and count more on the situational perspective of messages (Hall, 1983).

2.3 World Wide Web Communication and Culture

The website is now a well accepted means of communication among a large range of businesses and their various stakeholders (Smith et al., 2004). In eBusiness environments, the World Wide Web makes international markets available to even small companies, however, for global websites to achieve success it is imperative to appreciate and make allowance the cultural requirements of a varied user base. Given that local cultural perspectives strongly influence user needs, and populations vary by regional, linguistic and country boundaries, there is a growing need to design and build websites purposely for cross-cultural users (Smith et al., 2004). This is not a simple task – for World Wide Web developers to rely solely on instinct or their sometimes limited experience of interface design is unrealistic and developing a diverse range of interfaces for disparate user groups, results in increasing costs.

From a marketing communication perspective, the Internet and WWW is a relatively new channel via which communication mediums such as PR and advertising can be easily disseminated internationally. However, research into cross-cultural marketing and advertising highlights the importance of culture on global use of the medium (Hermeking, 2006). Levitt's (1983) prediction of a "one world culture" arising from this phenomenon has proved to be an illusion. As a result, the dominant focus of international and cross-cultural marketing research for over three decades has been on the "standardisation" versus "localisation" debate. The goal of localisation is to provide an impartial platform from which to initiate international eCommerce projects that accounts for a structure that supports local functionality and content (Shannon, 2000). Localisation therefore, is a procedure by which services and products are situated in the *cultural context* of its intended users. This means essentially, that a specific language and associated translations, along with factors such as *time zones*, *currencies*, *localised colours* and *codes*, *social* as well as *gender* roles and any *geographical* factors must all be considered (Regan, 2005). The result of this debate has been a classification of products as "culture-free" or "culture-bound". Products considered to be culture-free (digital and high tech products such as ICT) are therefore, deemed easy to standardise.

The predominant conceptualisations of culture in International Marketing and Advertising research are drawn mainly from the theories of Hofstede (1980) and Hall (2001). According to Hermeking (2006), a common criticism of Hofstede and Hall's models is the fixation with local culture. In Hofstede's model, culture is defined by country, independent of its national boundaries (as is the case of middle-eastern countries such as Saudi Arabia) and the racial or national multiplicity within each nation. These generalisations appear to be the prevailing school of thought and have been easily operationalised in International Marketing research. However, while some nations may be distinguished as traditional social, linguistic and cultural entities, this doesn't always hold true for all nations. In contrast, marketing researchers are less supportive of Hall's cultural context model due

to its perceived ineffectiveness.

The value of these models in International Marketing research is contingent on a fundamental delineation of the research material into a global versus multicultural context. Hermeking (2006) criticises both Hall and Hofstede's frameworks, stressing that they at best provide only preliminary and vague indicators of basic cultural factors which have serious consequences for international website design. Hermeking (2006) further suggests that richer, more in depth research which includes additional cultural criteria is required to strengthen the validity of the models.

The WWW's interface design and website design and quality are highly related to the diffusion and more importantly, the cultural adequacy of the Internet as a communication channel (Hermeking, 2006). From a marketing perspective, website design is described as "a specific set of technical, social, aesthetic, economic and symbolic attributes or qualities of a website that contribute to its users satisfaction, which in turn depends on the user's cultural habits and values" (Hermeking, 2006:203). A culturally well designed website therefore, "communicates the right information at the right place with the right layout, in the right manner in the right time, according to the culture of each of its users" (Hermeking, 2006:203).

Ju-Pak's (1999) study of cross-cultural advertising utilising Hall's cultural contexts model, which analysed 310 business websites based in the US, UK and South Korea found notable innate differences in favoured inventive strategies particularly in relation to the attractiveness of verbal and visual content. Ju-Pak (1999), found that rational appeals are prevailing in the US and United Kingdom (low-context culture), whereas emotional, symbolic appeals are more dominant in South Korean (high-context culture) websites. The study revealed quite clearly, that while messages can

usually be tailored to some degree to suit a range of communication preferences, culturally modified inventive approaches along with localised website design can lead to more appropriate exchange inclinations of high-context cultures.

A global study of business websites of a range of global companies and brands in high and low context cultures by Hermeking (2006) over a five year period, based predominantly on the World Wide Web and eCommerce found websites to be heavily standardised, dominated by rational appeals, with heavy text organisation, *low multimodality,* high levels of interactivity and deeply structured, high volume content. A large number of the websites analysed appeared to be highly standardised, were generally representative of low-context communication styles and did not appear to consider the preferred communication formats of the relevant nations.

According to Leonardi (2002), *linguistic* aspects such as the general tone of address or the use of language such as "we" may indicate some form of cultural modification, however, currently analyses of this type in International Marketing research is not evident. Surprisingly, some native speaking World Wide Web developers will routinely take account of cultural adaptation of the website design elements identified. Leonardi (2002) found that in order to enhance acceptability of the World Wide Web and Internet use globally, a greater scale of website adaptation appears necessary. He goes on to suggest that further investigation into the cultural contexts of international websites is warranted.

A study into the marketing of products and services on the Internet conducted by Maybury (2003) provides only a basic examination of cultural aspects of websites. Insights include factors to consider in designing websites and content, such as the use of relevant language, images and colours.

Singh et al. (2005) conducted a study utilising Hofstede's (1980) cultural dimensions which centred on the "standardisation" versus "localisation" debate. They analysed the content of websites from India, China, Japan and the USA. Singh et al. (2005) found that websites tend to reflect the country of origin's cultural values and differ considerably on Hofstede's cultural dimensions. The study provides evidence that a culturally unique World Wide Web style is becoming evident on the World Wide Web. Singh et al. (2005) suggest developers exercise caution when initiating standardised or "machine-translated" websites for international audiences. The findings further suggest that culturally distinctive World Wide Web design is rising on the World Wide Web. Singh et al. (2005) further concluded that the results of the study validates the cultural framework (based on Hofstede (1980) and Hall (2001) developed earlier by Singh and Matsuo (2002).

Singh and Baack (2006) suggest that in Marketing and Advertising, little research has addressed the problem of website standardisation or localisation and enter the discussion over whether websites are "culturally neutral" or "culturally sensitive". A content analysis of 95 US and Mexican websites (sourced from top Global Fortune 500 and Wrights Investors Service) supports evidence provided by Hall (2001); Hofstede (1980); Kluckhohn and Strodtbeck (1961) and Trompenaars (1998) that cultural value orientations are significantly distinguishable between cultures and nations. The study utilises Hofstede's cultural dimensions. The study concluded that winning companies "think global and act local" and "cater for a range of *linguistic*, cultural, content, technical, legal, marketing and infrastructure issues" (Singh and Baack, 2006:8), however, they provide little detail about what this actually means. Other elements mentioned include webpage arrangement, text length, modes of navigation, equivalence in translation, dialects, nation-specific symbolism, icons and colour representation. They conclude that just utilising local language translations is clearly not adequate to localise a website and propose a framework to analyse World Wide Web communication and allow

developers to customise International website to local cultures.

In 2007, Baack and Singh extended their earlier work on the cultural analysis of World Wide Web content and examined the content of websites from 15 countries. The study criticises previous studies for using one cultural framework for conceptualising culture, two country samples, a limited focus on print or TV ads and lack of statistical validation of measures used. Baack and Singh suggest that Hofstede's (1980) and Schwartz's 1994) cultural frameworks are two inclusive frameworks that are suitable for cross-country theorising by marketing researchers and test the applicability of these two frameworks, concluding that a mixture of the two frameworks, as opposed to one in isolation, more adequately conceptualises the impact of culture on marketing communications on the World Wide Web. They further suggest that there is no reason not to believe that claims made by some researchers that as competition intensifies, advertising appears to progress from appearing "*generic*" to being more driven by culture would not also be the case with World Wide Web communication.

Cho and Kang (2006) conducted a study on trends, patterns and rigour in research about the Internet. They content analysed published Internet-related papers in fifteen (15) major journals in Marketing Communication and Advertising from 1994-2003. Their analysis revealed that only 2.7% (25 articles of the 4,050 sourced) of all papers published examined cultural issues from a cross cultural perspective and concluded that further investigation was warranted.

Fletcher (2006) supports Cho and Kang's finding and suggests that studies emanating from the field of culture and communication is inadequate, particularly in developing countries. In a study conducted in 2006, Fletcher illuminates the necessity for "cultural sensitivity" in website design for

different cultural groups, however, falls short of providing deep insight into what he means by "cultural sensitivity". His study utilises both Hofstede and Hall's models. Fletcher suggests that patterns of discourse differ from culture to culture and highlights the importance of effectively conveying desired meaning. In terms of language, he agrees with Singh and Baack (2006) that simple translation from English is not sufficient. Other design factors he states must be considered include the use of colours, numbers, and the pattern of reading (left to right versus right to left). The results of this study however, provide limited insights.

More recently, Usunier and Roulin (2010) using content analysis examined five hundred and ninety seven (597) B-B websites in fifty seven (57) countries to determine the influence of high and low cultural context (Hall, 2001) communication styles on website design and content. The findings from this study suggest that high-context communication styles may be detrimental to the design of global websites rendering them less readable and less effective in the use of colours, graphics and less interactive. The authors found that a key weakness in the development of the websites examined is that using coders predominately from low-context countries could lead to possible bias when coding company websites of high-context countries. This notion is supported by Hall (1976) who argues that there is "a paradox in investigating high-context behavioural responses with low context methods" (1976:91).

2.4 Cross-Cultural Frameworks

Several prominent frameworks have been proposed to try to understand and explain cultural differences at both the individual and national levels. The most notable and widely cited in the academic literature are Hofstede's (1980) cultural dimensions framework and Hall's (1991) cultural contexts framework. Other frameworks cited in cultural studies to a lesser degree include Schwartz

(1994) and Trompenaars (1998).

A number of studies that array large numbers of cultures on 'a priori' dimensions have been discussed in the academic literature (Schwartz, 1994). (See for example, Berry, 1976, Buss et al., 1990; Whiting and Whiting, 1975). According to Hofstede (1984:18) a value is "a broad tendency to prefer certain states of affairs over others". Schwartz (1992:2) extends this notion, adding that values are "desirable states, objects, goals or behaviours, transcending specific situations and applied as normative standards to judge and to choose among alternative modes of behaviour". This means in essence that values assist people in selecting suitable behaviours for interacting with their environment and sway the manner they observe and appraise the world around them. These values can impact shared structures (Hofstede, 1980) and according to Gidden (1984), ecological elements such as technological progression of a culture. Zakaria et al. (2003) suggest that values represent a valuable tool for exploring differences between cultures.

Hofstede's (1980) ground breaking research on work values in 53 nations is proffered as one of the most influential and cited studies of this kind, "providing one of the few empirically and conceptually based sets of cultural dimensions on which contemporary cultures can be arrayed" (Schwartz, 1994:86). From his study, Hofstede (1997:5) describes four dimensions along which the dominant value systems in different nations can be ordered, including:

power distance – "the extent to which members of a society accept [or legitimate] that power in institutions and organisations is distributed unequally".

uncertainty avoidance – "the degree to which members of a society feel uncomfortable with uncertainty and ambiguity, which leads them to support beliefs promising certainty and to maintain institutions protecting conformity".

masculininty/femininity – "a preference for achievement, heroism, assertiveness and material success as opposed to .....a preference for relationships, modesty, caring for the weak, and the quality of life".

individualism/collectivism – "a preference for loosely knit social framework in society in which individuals are supposed to take care of themselves and their immediate families only as opposed to ..... a preference for a tightly knit social framework in which individuals can expect their relatives, clan and other in-group to look after them, in exchange for unquestioning loyalty".

Hofstede's dimensions of cultural variation are cited as "ecological" or culture-level dimensions. A review of relevant literature reveals that individualism/collectivism has been most often employed as an explanatory variable in cultural studies. In fact, according to Triandis (1994), this has been the dominant approach for over 30 years, with dozens of studies conducted in and across various cultures and societies. The basic findings from these studies generally support Hofsede's contention that European-derived cultures are more individualistic than Asian or Latin American cultures. In addition, there is evidence that individualism and collectivism are "cultural syndromes", beliefs, attitudes, norms, roles and behaviours found in specific cultures converge and also differ in a number of ways from those found in other cultures.

Triandis (1994), also a leading figure in the development of cross cultural psychology, has for more than a decade been a key figure in studies of individualism/collectivism. His work in this area resulted in the individualism/collectivism dimension being reconceptualised in a broader context, stressing more sternly than Hofstede the notion that "individualism means giving priority to personal goals over the goals of the "in-group" (Triandis, 1994, cited in Schwartz, 1994:87). Conversely, collectivism means prioritising group goals over individual goals.

Hall's (1976) intercultural communication theory offers a framework for appreciating the ways that people from a certain culture communicate with each other at an interpersonal level (Zakaria et al., 2003) and makes a substantial contribution to research focussed on understanding intercultural communications. The framework includes a number of dimensions that vary across cultures. Most often of these cited in information systems research into cross-cultural communication is the *contextual dimension*. A central tenet of Hall's thesis in regard to context is that cultures differ significantly in the level to which contextual aspects are important in individual-to-individual exchanges within a culture. The contextual aspect represents the ways in which people observe, substitute, utilise and exchange information (Zakaria et al., 2003); the level a communication setting includes information that is crucial for acceptance and comprehension of a communication. Senders of messages thus consider the "culturally normative" communication perspective when they develop a communication and there is an expectation that the receiver of the message will interpret it utilising "unique cues" from that communication context. Context according to Hall (1976:91) is represented as a scale ranging from low to high context. In high context societies, such as Saudi Arabia, most messages are curt in which both sender and receiver presume a great amount of shared knowledge, in contrast to low contexts where "the accumulation of information is vested in unambiguous codes".

According to Trompenaars (1998) context has to do with what one needs to be familiar with before efficient communication can happen as well as how much collective knowledge is accepted without question by the parties to the communication. Trompenaars (1998) adds that individuals from high-context societies tend to "circle around" a newcomer to become familiar with them in order to engender trust before revealing relevant information.

Contextual dimensions proposed by Hall (1976) and Trompenaars (1998) are useful in identifying the basis for a strong cultural disparity between low and high context communications in low context (western societies) and high context Arabic and non-western societies.

Schwartz (1994) proffers that culture is best viewed as "a complex, multidimensional structure rather than as a simple categorical variable" (in Clark, 1987:461). Schwartz criticises previous cross-cultural studies for comparing samples from only two to three cultures, commonly operationalised as different nations. According to Schwartz's framework cultures are arrayed along interpretable dimensions, similar to that proposed by Hofstede (1980). Schwartz suggests that Geert Hofstede's monumental research on work values in 53 nations or regions provides "one of the few empirically and conceptually based sets of cultural dimensions on which contemporary cultures or nations can be arrayed" (Schwartz, 1994:86). These dimensions are widely accepted and have been used by many researchers to compare cultural groups. However, Schwartz raises a number of issues with Hofstede's dimensions and the use of culture-level dimensions in general. These include, "the exhaustiveness of the value dimensions; adequacy of the sample of nations; effect of sample type; historical change; culture-level versus individual-level dimensions and evidence of the meaning of values" (Schwartz, 1994:86). Schwartz extends Hofstede's work to derive a new set of validated *culture-level* dimensions that categorise seven distinct cultural value types, but concedes that the two sets of dimensions are related in some respects. For instance, a dimension similar to Hofstede's *individualism* was found and for Schwartz, was not surprising that so many researchers have found Hofstede's individualism/collectivism dimension appealing when thinking about cultures. He suggests that the appropriateness of culture-level value types is relevant when research "seeks to understand how differences between cultures in their symbol systems, institutions, rates and styles of behaviour are related to cultural values" (Schwartz, 1994:117).

2.5 Summary

For more than a decade, scholars from a range of disciplines (Information Systems, Computer Mediated Communication and International Marketing and Advertising) have attempted to identify and understand the issues around technology-mediated communication and culture as well as cross-cultural website design and the globalisation of business. Arguments have centred on the "localisation" versus "internationalisation" debate; website usability criteria; *cultural sensitivity*; website analysis and design methodologies; whether or not methodologies and tools developed for use by western developers are appropriate for other cultural contexts and proposal of a number of frameworks for analysing technology-mediated cross-cultural communication and websites. While each of the studies conducted to date has contributed to our understanding of computer mediated cross-cultural communication and website design and development there is general agreement that there is still much work to be done in this area and major contributions still to be made.

CHAPTER THREE

Theoretical Foundations

3.1 Introduction

The main purpose of this chapter is to use the work previously described in relation to culture, globalisation, cross cultural frameworks, and web system development practices in ways which will enable us to derive a new approach to the relation between culture and technology that might be of use in Marketing. Specific cultures consist of a multitude of generally assumed or taken-for-granted differences, and where there are differences there is choice and where there is choice there is meaning (Eggins 2004:3). Cultures are also all-embracing in that there is no privileged position from where any person can be said to be independent of their culture. Nor is there any position outside of culture where one may objectively judge another's culture. Culture affects every facet of our lives as will be seen in discussions on communication and culture, later in this chapter. This chapter will critically review the communication theory that underpins most work in this area as well as most commerce - and informatics-related disciplines - the so-called (information) transmission model of communication (Shannon and Weaver, 1949). This theoretical critique in organised in order to establish the parameters of its replacement by trying to consider what the received literature negates, and then using these as the point of departure for a new approach that considers web systems development and, more importantly here, its use, as communication in cultural contexts; one that recognises the range, extent and depth of cultural differences.

3.2 Contested Category of Communication

What is needed are ways of understanding marketing messages as communication in cultural settings. Web development practices need to be created and applied to consider communication in cultural contexts. In the next section, this thesis suggests that the standpoint from which to develop an appropriate view of communication is from a cultural perspective. However, it is important to first consider why is it the case that we misunderstand communication and fail to consider it from a cultural perspective? The answer for these difficulties lies in the foundations of the communication theory that is at the heart of marketing, mass communications, media and information systems, and which is fundamentally built into the client-server model at the heart of the Internet - Shannon and Weaver's (1949) theory of communication. Simplified models have been developed consisting of source or origin of the message, the message itself, a channel by which the message is conveyed and a receiver. More complete models recognise that a transformation occurs between a message from the sender (information source) and signal that results from its transmission with the converse operation occurring at the receiver's end (destination). During transmission the message may be corrupted in some way usually modelled by the addition of noise, see Figure 3.1a (Davis et al., 1993). So influential has this model been that it has spawned variants tailored to particular circumstances, and these too have dominated their disciplines. Two examples of these variants are provided in Figure 3.1b and 3.1c respectively, a mass media variant and one which factors in a feedback loop which might usefully be applied in marketing for example (O'Sullivan et al., 2001).

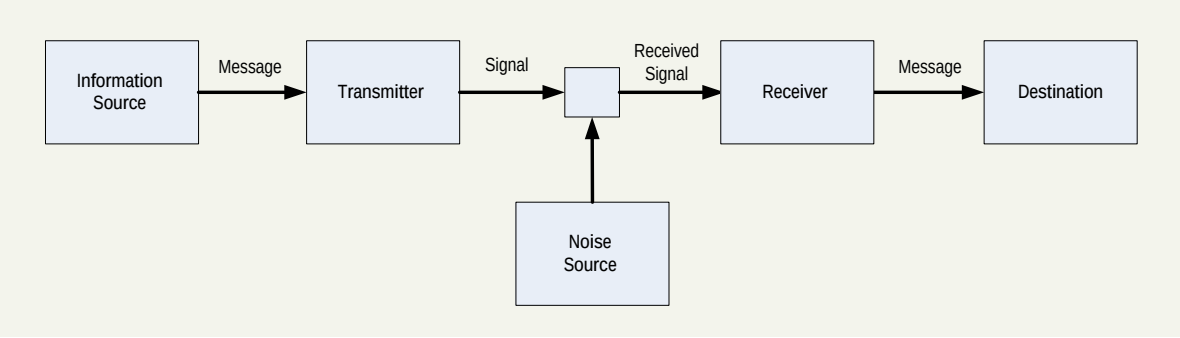
There are a number of detrimental effects of the adoption of Shannon and Weaver's (1949) model of information for disciplines and their practices. This model has been known to detrimentally affect research agendas within disciplines including the *type of research*

questions that get posed in academic studies. Within the information systems discipline, the transmission model of communication tends to couch studies in terms of *individuals* (Swanson, 1987), so that for example, the determinants of information system use are scoped accordingly to the effects of an individual's information system use. The application of the transmission model of communication prevents the development of alternative social concepts in these disciplines unless of course these too are individualistic in nature. Similarly, *the kinds of methods that are developed and applied within disciplines* are affected by the adoption of Shannon and Weaver's (1949) theory of communication. An example of a venerable and still dominant development method for systems analysis called dataflow diagramming (Gane and Sarson, 1979) is based entirely dependent on this theory.

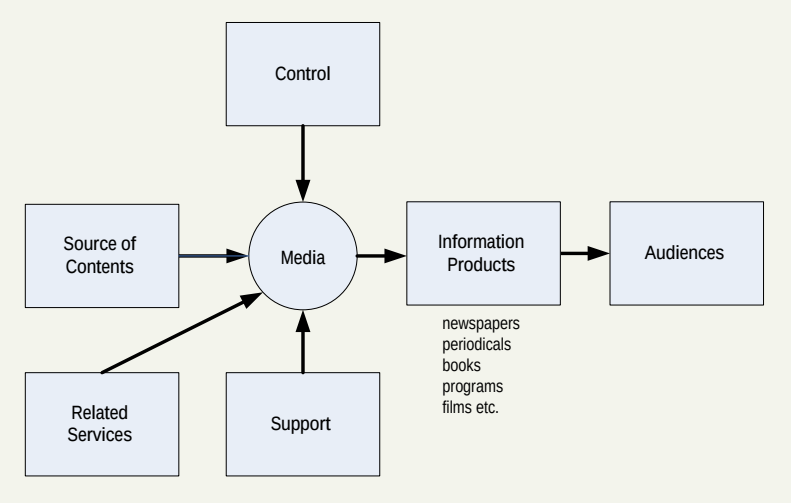
The transmission model of communication (see Figure 3.1, below) is so dominant, precisely because it fits right into the *individualism* in existing IS research. Questions related to technology use in organisations are couched in terms of individual performance. It is difficult to acquire individual performance data in organisations because it necessitates some kind of workplace monitoring in order to measure individuals performance, therefore individualised surrogates like 'user satisfaction' get used. The individualism that is provided by systems practices that have the transmission model embedded in them, fits perfectly with the individualism of a great deal of research in other related areas, for example, in the management literature. This is why organisational theory has focused for the most part on individual information system use. Research areas that have a social focus like Computer Supported Cooperative Work (CSCW) developed in Europe were in effect, later appropriated in the United States as *Groupware* with the concept of a group as an individuated entity. Similarly, a less well known example which included a very promising area never taking off because its' social emphasis was at odds with the prevailing individualism in computing

Figure 3.1: (a) Transmission Model of Communication (after Shannon and Weaver, 1949) and variants of this model developed within (b) mass communication and (c) media studies (after O'Sullivan et al., 2001)

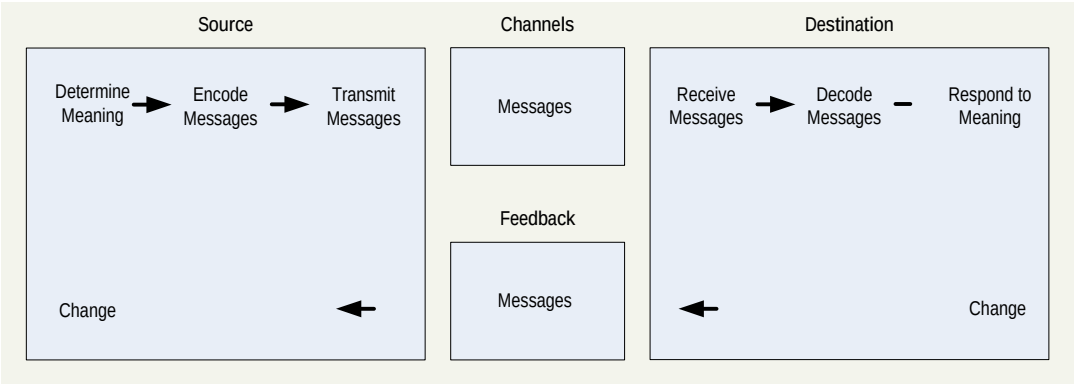
(a)



(b)



(c)



disciplines was an area called *software ergonomics* developed by Turner and Karasek (1984). Perhaps more disturbingly, Shannon and Weaver's (1949) transmission model of communication has unfortunate political consequences. Communication gets reduced to "the

exchange of information between a sender and a receiver and the inference of meaning between organisational participants" (O'Reilly and Pondy, 1980:121). However, if this model is about 'transmission' in an organisation or in a society, then who has the role of the sender becomes a political act - who can 'speak', who is allowed to 'speak' and who has the authority to 'speak'. In everyday life we know this to be true. When parents speak one is expected to obey because 'little children should be seen and not heard', or when the teacher speaks we should as students be silent because 'there should be no talking in class [except for the teacher]'. Therefore, by adopting a position about a communication model like that of Shannon and Weaver (1949), we also adopt a *theory* of communication that privileges those who have the power to speak over those who may only be permitted to listen! In order to account for website meanings in cross-cultural circumstances we must look for alternative theories of communication - ones which do not rely upon an unequal social relation of power hardwired into them to account for messages in organisational and cultural contexts.

Brennan (1992) classified communication theories into three kinds - psychological theories, sociological theories and information and meaning based theories. *Psychological theories* are concerned with the major effects of communication upon the beliefs and actions of individual persons. These effects may occur in direct face-to-face communication, or they may be an outcome of disclosure to the mass media. By definition theories that construe web systems from an individuated perspective are by definition psychological theories of communication. This also includes Shannon and Weaver's (1949) model and its variants. Brennan (1992) defines *sociological theories* of communication as those that involve the relationship between the communication or media and groups or classes in society. These theories are classified further into social, political or cultural theories, depending upon the nature of the groups and the beliefs at issue. Brennan (1992) defines a third category of communication theory which

he calls *information and meaning theories*. He classifies these together primarily because the author considers both to be concerned with the message however this thesis will consider these as distinct categories. Information based theories tend to concentrate on the structure of the message exclusively with other surrogate attributes like for example communication effectiveness (the proportion of the signal transmitted that is received). *Semantic or meaning based theories of communication* on the other hand rely upon the study of meaning called *semiotics* to provide descriptions for the production and consumption of units of meaning (signs).

In order to work towards the goal of creating a theorisation of web systems that recognises the range, extent and depth of cultural differences, this thesis cuts across Brennan's (1992) categories looking to a combination of 'sociological' or cultural theory together with semantic approaches to communication. Each of these categories is discussed in the next two sections. In section 3.3, the thesis provides an introduction to communication and cultural studies in order to identify what characteristics of communication need to consider in e-Business systems and specifically cross-cultural websites. In section 3.4, the application of semiotics to systems is described and discussed.

3.3 Communication and Culture: Requirements of a Suitable Theory

Not surprisingly, given the difficulties with Shannon and Weaver's (1949) transmission model of communication, there have been some attempts to consider systems in organisations from other received communicative perspectives. However, one of the few published reviews of linguistic theories potentially applicable to the information systems discipline by Lyytinen

(1985) omitted any mention of language theories that are semiotic in nature (these are discussed in the next section) and considered only a limited range of socio-linguistic approaches. From Lyttinen's (1985) list of theories applicable to information systems and therefore web systems, the inclusion of *formalist* approaches to communication that emphasise the ideal nature of a speaker's grammatical competence - theories developed in their most extreme form in the work of Noam Chomsky, is also excluded. While influential in artificial intelligence, these theories could not possibly account for communication in organisational or cultural contexts. Table 1, shows a range of relevant communication theories (Eggins and Slade, 1997:24; Butler, 2003:xvi) that are potentially applicable to information systems description (Clarke 2000) and therefore, by extension, to web systems.

Table 3.1: Potentially relevant communication theories in information systems description with significant theorists and publications (Based on Eggins and Slade, 1997:24 and Butler, 2003:xvi)

Ethnomethodology Garfinkel (1967) *Conversation Analysis (CA)* Sacks (1995); Schegloff (2007)
Sociolinguistics *Ethnography of Speaking* Hymes (1972b, 1974) *Interactional Sociolinguistics* Gumperz (1982a, 1982b); Goffman (1959, 1981) *Variation Theory* Labov (1972a); Labov and Waletzky (1967)
Logico-philosophic • *Speech Act Theory (SAT)* Austin (2005); Searle (1969) *Pragmatics* Grice (1975); Leech (1983); Levinson (1983)
Structural-Functional *Functional Grammar (FG)* Dik (1997a, 1997b) *Role and Reference Grammar (RRG)* Van Valin Jr. (1993) *Birmingham School* Sinclair and Coulthard (1975); Coulthard and Brazil (1979); Berry (1981a, 19812b) • *Systemic Functional Linguistics (SFL)* Halliday (1978,1985); (Hasan (1984,1992); Martin (1992, 2009)

In the quarter of a century that has lapsed since Lyytinen's (1985) attempt to assess the relevance of communication theories to the information system discipline, of those listed in Table 1, only two have had any kind of traction within information systems (Clarke, 2000).

These are Speech Act Theory (SAT) and Systemic Functional Linguistics (SFL) and so in the remainder of this section, the focus will be on these approaches.

Logico-philosophical Approach of Speech Act Theory (SAT)

Speech Act Theory or SAT (Austin, 2005; Searle, 1969) starts with the idea that "...every utterance can be analysed as the realisation of the speaker's intent to achieve a particular purpose" (Eggins 1997:40), the *speech act* or *illocutionary act* becomes for those that follow Austin and Searle the basic unit of discourse analysis. By paying attention to the communication associated with the use of an information system, a kind of description can be made of the work being studied. Speech Acts can therefore, be applied to analysing systems and they can also be useful in designing new systems. SAT was used as the basis for two schools of thought within information systems, the so-called LAP or *Language Action Perspective* (Goldkuhl and Lyytinen, 1982) which is most closely associated with Göran Goldkuhl and the so-called VITS network of Scandinavian researchers centred around Linköpings University in Sweden and the work of Jan Dietz and colleagues centred around Delft University of Technology (Dietz, 1999).

LAP has represented a major contribution to the information systems discipline because it emphasises the communicative nature of information systems and of information systems activities including their development (Lyytinen, 1985; Lyytinen and Lehtinen, 1991). Although the LAP annual workshops are now discontinued (the tenth and last one was held not surprisingly in Swedish Lapland), it helped propel other language action perspective research including Information Systems *actability* (Ågerfalk, 2003) and *pragmatics* (Ågerfalk 2010; Ågerfalk and Eriksson, 2004; Sjöström, 2010). On the other hand, Dietz's group were

particularly interested in transaction modelling, business process analysis and design and developed a methodology, Design & Engineering Methodology for Organizations (DEMO) for undertaking this (Dietz, 1999). This particular variant on the application of SAT to information systems has been less successful than LAP.

*Systemic Functional Linguistics*ic

The discussion now turns to System Linguistics, the most used functional model of language applied to information systems (Andersen, 1990; Clarke 2000, 2001a). To say that an approach to language is *functional* is to make the claim that language is a means of communicating between human beings and is critical to understanding how humans are the way they are. From a functionalist tradition, one tries to understand authentic language use with all of its inconsistencies and ambiguities. Andersen (1990) and colleagues from Århus University, Denmark (Andersen, Holmqvist and Jenson, 1993) applied systemic functional linguistics most noticeably in the analysis of authentic *work-oriented language* using this as a lens through which to understand work in organisations. A number of Andersen's early efforts were also directed at *professional-oriented language* those most closely associated with managerial discourse. In systemic functional linguistics, this is a distinction which is covered theoretically by *register* or situational language defined in a later section. Clarke (2000, 2001b) was interested in the category of culture in relation to communication (text) referred to in systemic functional linguistics as *genre*. The term gene has been used by a number of different authors, but the systemic definition of this term corresponds to a reproducible communication pattern, and this formed the basis of an approach to process and service modelling. This term will be defined and explained in more detail in section 3.5.

Requirements for a Suitable Theory

So far, this thesis has introduced some of the received communication theories that are potentially applicable to considering web systems, although all of the discussion so far has been directed at information system more broadly. Following on from this discussion, the first requirement for a relevant theory of communication for use with web systems is therefore, the one this thesis takes a *functional* approach to language. There is, with functional theories, a chance to actually account for real situations rather than adding a layer of abstraction before we start to understand our problem - arguably a result of narrow and stereotypical approaches to culture found in the eBusiness and web systems literatures.

In order to theorise communication in cross-cultural web systems we also need to not simply choose a theory of language, we must adopt a *communication and cultural studies* perspective. This combination of interests has arisen relatively recently, although the two disciplines upon which this approach is based have themselves a larger disciplinary history. All cultural practices are significant and all cultural objects are endowed with meaning. Also, every cultural practice is a communicative event and every act of communication is a cultural event and nothing outside of culture can be a part of communication (Kress, 1985). Culture sets the ground entirely for communication, for what can be communicated, what is communicable, and how it is communicated. It is very important to know that culture and communication are two sides of the same coin. They are different labels designed to name different aspects of the same complex set of structures and processes (Kress, 1988). Communication is the label that refers to those meanings, and their conscious or unconscious, deliberate or accidental exchange among members of a culture, or among members of closely connected cultural groupings - in society. *Cultural studies* are a discipline that has been associated with the study of exotic cultures that are the interest of traditional anthropology.

The emergence of cultural studies has been an attempt to recognise the cultural diversity that can occur within one country. Not surprisingly then, its ideas about culture came into circulation within academia at a time when the British Empire is arguably disintegrating! The history of *communication studies* is no less tied to real social issues, like the rapid development of information technologies, the pervasive spread of electronic media, and the quantum leap in the size of the service sector. The discipline of communication studies has an interest in other disciplines but combines them in particular ways. It also permits new approaches for many disciplines to which it is applied including those disciplines interested in technology, social change, and its effects on the structures and contents of communication.

From communication and cultural studies, other requirements for a suitable communication theory for web systems can also be determined. Most importantly, communication is about *meaning* rather than information. The problem with the mathematical theory of communication is best summed up by Shannon himself who stated in a footnote to Shannon and Weaver's (1949:31) famous paper that:

> "[t]he fundamental problem [being addressed by their theory is] reproducing at one point either exactly or approximately a message selected at another point. Frequently the messages have meaning; that is they refer to or are correlated according to some system with physical or conceptual entities. These semantic aspects of communication are irrelevant to the engineering problem."

Communication is also much more than, and very different from, 'sharing meaning' or 'mutual construction of meaning'. Societies and cultures consist of multiplicities of social and cultural groupings. The interactions between and across these groupings are likely to involve *contradiction and contestation*, as much as they are likely to involve sharing. The

processes of communication are likely to be based on *difference* and on the *'resolution of difference'* at one and the same time.

Communication also includes such things as attributes, social relations, individual feelings and the social positioning of the sender and receiver. Communication is also about things we think of as information, that is, statements about the physical and social world. The discipline of communication studies is primarily concerned with the *production and consumption of meaning* in actual communication processes. Communication *never* involves 'just' individuals expressing 'their' meanings. The meanings are produced and consumed by individuals who are *already socially and culturally formed*. These 'individuals' draw on the meanings that are in effect already available as part of their cultures and social groups. As Kress (1988:4-5) states " the point is that the processes of communication always take place in a specific social and cultural setting, never simply between you and me just as individuals; and the structures of power, or authority, as well as the structures of solidarity, exert their influence on the participants".

3.4 Semiotics and Information Systems

Semiotics is the discipline whose purpose is to study meaning. Even the earliest researchers in information systems reasoned necessarily about the relation between messages and meaning. Most noticeable was that of the Swedish researcher Börje Langefors (1995), the first professor and founder of the discipline in Scandinavia, whose work *Theoretical Analysis of Information Systems* (Langefors, 1966) developed concepts like e-messages and e-sentences which seem to resonate with semiotics. The discipline has had a few noticeable researchers who have advocated semiotics and developed to greater or lesser extent, methods based on semiotics. These include Ronald Stamper (Stamper, 1996; Stamper et al., 2000),

commonly thought of as the first to popularise semiotics in the information systems discipline, and Peter Bøgh Andersen (Andersen, 1990; Andersen et al., (eds), 1993) who advocated the application of semiotic principles to computers. In this section, the basic units of semiotic analysis, signs, sign systems and texts are considered. Applications of semiotics in eBusiness are also discussed.

Sign Models and Sign Systems

There is considerable debate about what constitutes the core criteria that defines semiotics (Clarke, 1992:66). Most semiotic studies utilise a model of the *sign* as a basic unit of investigation - a sign usually being glossed as 'something which stands for something else in some capacity or another'. An example of a sign could be a 'red rose' which in some cultures signifies love, or 'smoke' which all cultures would signify as fire. The latter example, is often referred to as a natural sign, whereas the former is an example of a cultural sign because it would not necessarily have this meaning in any other culture apart from the one in which it is found and therefore used. In modern semiotics, there are two dominant models of the sign. The first developed by Saussure (1993) consists of two entities forming the so-called *dyadic sign* consisting of a *signified* which is the content or meaning of the sign and simultaneously its *signifier* or how it is expressed or realised. So, the sign 'red rose' has 'love' as the signified and the actual flower is its signifier. Peirce (in Nöth, 1990:11-38), on the other hand, developed a sign model with three entities forming a so-called *triadic sign* consisting of a sign vehicle called a *representamen* (similar to Saussure's signifier), a referent called an *object* (similar to Saussure's signified) and someone making the inference of meaning - the *interpretant* - which has no equivalent in Saussure's world view. By adding the interpretant, Peirce effectively allowed a cognitive, individualist perspective to be adopted by applied semioticians. This can cause problems when applied to eBusiness, as highlighted later. There

are a plethora of distinct sign models based on the work of Saussure and Pierce. In modern semiotics alone - dating from the turn of the century - there are at least fifteen dyadic sign models and ten triadic sign models (Nöth, 1990:79-91). (Also refer to Nöth (1990:11-38) for a history of semiotic theory starting from the Greek philosophers).

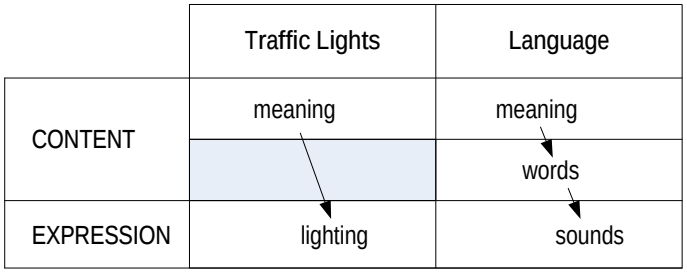
As can be seen, signs by themselves are useful, but if we want to examine real semiotic systems we need to look at how signs are organised within ourselves, our organisations and importantly, in our cultures. Related signs are organised together into *sign systems* which have three attributes, a finite set of *options* where each choice is *discrete* and each choice is based on *differences*. Following Eggins (2004:13-15), these attributes can be demonstrated using the example of a traffic light. The options for a traffic light are red, green, and amber. This set of options forms its so-called *paradigm*. In this hypothetical case you only get one colour at a time. Each of these options is based on differences in meaning. 'Red' for example is not inherently about 'redness' it is actually about not being 'amber' or 'green' in the sign system of a traffic light. This is a truly profound consequence of adopting semiotic thinking that the meaning of any one thing is not inherent to it, but resides in what it is not in a system of signs. Of course there are special cases that appear to operate differently, for example, some traffic lights do show more than one light at a time and so on, but all of these variants can be modelled using more complicated arrangements within a semiotic system. The traffic light itself is a technology that provides us with messages concerning how to behave in a social circumstance (a traffic crossing). We also need to know something of the social context in order to understand the function and purpose of this technology. Interestingly, despite standardisation there are real differences in the way in which traffic lights work from country to country (between UK and Australia), and even between region and region (different Australian cities like Sydney and Melbourne).

Another interesting consequence of such a simple example has some profound consequences for the human interaction with computer systems. The paradigm for the sign system of traffic light forms a redundant code. Traffic lights vary in terms of colour and also position; red at the top, amber in the middle and green at the bottom. While the static behaviour of the traffic lights (the organisation of the lights on the traffic light) is standardised, the dynamic behaviour is not. This accounts for the differences in how traffic lights work between countries and regions. The relevance of this example to the study of information system, web systems and interfaces is that while computers hate redundancy, humans love it. We design, use and expect redundancy on our sign systems. Sometimes there are real uses for it as with traffic lights that can accommodate colour blind users (roughly 10% of the population has the most common form of red-green confusion). In other cases, redundancy is used to make certain messages emphatic, and this also occurs in user interfaces, for example.

Linguistic Signs and Texts

Most semiotic systems in social life comprise a conventional pairing of representations with meanings. For example, traffic lights are a semiotic system referred to as a *two level semiotic system*. However, language is by far the most sophisticated and elaborate of all our semiotic systems. It is unique because it is not organised to have a simple 'content' mapped into an 'expression' (stop → red light). Rather, language is organised as a three level system; meanings are mapped onto grammar which allows the same language units to be reused in many ways prior to being expressed. For this reason, SFL uses the term *text* defined as a 'completed act of communication' as its unit of analysis rather than the sign which most usually is associated with two level semiotic systems. This difference between language and other semiotic systems is diagrammed in Figure 3.2 (after Eggins, 2004:17).

Figure 3.2: Content and expression in traffic lights and language (modified after Eggins, 2004:17).



European semiotics in particular has had close ties with communication theories of various kinds. There has been a continuous dialogue between linguistics and semiotics which can be dated to the start of modern semiotics (Nöth, 1990:11-38). Saussure (1993) was after all a Swiss linguist. His semiotic writings, posthumously compiled by Charles Bally and Albert Sechehaye, were outlined in only a few pages in order to distinguish it from the study of language with which he was primarily concerned. If we are interested in semiotic approaches that are also theories of communication then we are left with only two major ones- glossematics and systemic functional linguistics - with some variants of the latter, see Table 3.2.

The Danish semiotician Louis Hjelmslev (1963) developed the field of *glossematics* a semiotics of language in the 1930s, but it had all but disappeared by the 1970s according to Andersen (1990) as a result of the upsurge of the formalists. Andersen (1990:11-18) provides a detailed evaluation of glossematics, however, it is beyond the scope of this discussion other than to note that this approach has not ever been applied in information systems. One aspect of Hjelmslev's work that is significant for this work is the content and expression distinction shown in Figure 3.2. This is an important organising principle in glossematics and means that the level below (whatever counts as 'expression') is used to *realise* what lies above (which is

the ‘content’). For SFL meanings are realised into words and words are realised into sounds or scribbles on a page; realisation is an important principles in this model of language.

Table 3.2: Semiotic communication theories with significant theorists and publications

Glossematics Hjelmslev (1963)	
Systemic Semiotics Fawcett (1987)	
Systemic Functional Linguistics (SFL) Halliday (1978,1985); Hasan (1984,1992); Kress (1985); Martin (1992, 2009); de Joia and Stenton (1980); Eggins (1994, 2004); Eggins and Slade (1997)	*Social Semiotics* Hodge and Kress (1988); Kress ed. (1985); Kress and van Leeuwi (1990); Lemke (1998); Thibault (1991)
Critical Linguistics Hodge and Kress (1974, 1979)	*Critical Discourse Analysis (CDA)* Fairclough (1989, 2005)

Systemic Functional Linguistics and the work of Halliday and others have previously been introduced and this thesis will explore this in more detail in section 3.5 as it forms the point of departure for our approach to web systems analysis. But it is interesting to consider Andersen’s (1990:9) criticisms of it. He identified two criticisms. His first criticism is that SFL does not support active design (or information systems or web systems) and the creative use of signs. Some of the language resources associated with ‘contexts’ in systemic functional linguistics are sufficiently broad enough to be used for both analysis and design activities (in fact, surprisingly, these are reciprocal operations according to Clarke, 2000). So the opening part of Andersen’s (1990:9) criticism appears to be in error. Parenthetically, it is not surprising that general semantic principles may find themselves throughout the language system and also in other non-language systems as discussed in section 3.6 when looking at non-language resources using a broadly systemic approach. Andersen’s comment about the creative use of signs would likely seem dubious if as has been claimed by Clarke (2000)

design activities can be accommodated within a systemic approach. The second of Andersen's criticisms (1990:9) is more interesting:

> ... with a few exceptions, [SFL] is not used for describing codes other than verbal ones it is difficult to judge if it can be generalised to cover non-verbal signs also. Technological developments in recent years have made this a real drawback, since pictorial codes are now commonly used in interfaces, and multimedia applications, involving sound, animations and video seem to be just around the corner.

From first principles, a model of language cannot be used to describe non-language resources, and in fact this has spawned the development of *Social Semiotics* precisely an attempt to apply some of the general semantic principles employed in SFL to non-language semiotic resources including images; see in particular, the work of Kress and van Leeuwin (1990) which was published the same year as Andersen's volume. In Table 3.2, SFL and Social Semiotics is arranged on the same row to indicate this close theoretical relationship. The combination of social semiotics and Systemic Functional Linguistics is called *Systemic Semiotics*. This is the approach advocated in the remainder of this thesis.

Critical Discourse Analysis (CDA) views language as a form of social practice and emphasises the ways social and political domination are evident in all forms of communication (Fairclough, 1989; 2005). It has been influenced by developments in Systemic Functional Linguistics, Critical Linguistics and Social Semiotics. To the best of the candidate's knowledge, there have been no applications of Critical Linguistics (Hodge and Kress, 1974; 1979) or CDA in information systems or web systems development. For the purpose of this thesis, these as variants of Systemic Semiotics, included for the sake of completeness, but not discussed any further.

The specific point of view that Andersen (1990: 9) and his colleagues adopted for example, is to look at computer systems and information technology from the perspective of *media* and to consider media from a semiotic theoretical perspective. As Andersen (1993:2) states "[s]emiotics is based on the assumption that creation and communication of meaning is based on signs and codes. As a method it draws primarily on approaches and terminology of linguistics and yet it has made progress and achieved success over the past decades ... in the study of other sign systems, especially cinema, literature, pictures, television, cultural codes, and advertisements. And now it is the turn of the most recent sign system - computer systems." This thesis advocate's systemic semiotics for precisely these purposes associated with web systems in eBusiness applications.

From the perspective of Systemic Semiotics, the unit of analysis is the *text* defined as "a completed act of communication in any media" (Kress, 1985). This enables us to be free of the technological means of realising this content (media) and allows us instead to attempt to understand the relationships between media where they occur, in particular, on a website or page. From an SFL perspective, the text in question is linguistic and defined by the description of language described in section 3.6. This includes not just text on a web page but other language resources, menu options, navigation labels, and also language that is normally considered as special types of new media - 'tweets', for example. However, from a social semiotic perspective, the definition of a text includes non-language resources (two level semiotic systems) like for example, images, and digital video and virtual realities. The concept of a text necessarily expands to be more closely associated with the idea of text employed in communication and cultural studies. For systemicists, texts are *products* - media in the sense that Andersen (1990) and colleagues (Andersen et al., 1993) describe it - that have an expression of some kind, and also simultaneously texts are *social processes* -

inextricably linked to social situations and cultures that make them meaningful (refer to section 3.6 for more details on this).

Semiotics applied in eBusiness

As with all disciplines, utilising theory from outside of one's discipline often leads to considerable problems. In applied areas like information systems for example there is often a considerable motivation to develop and exploit new approaches quickly and without due care, and this has certainly been the history of communication studies in information system. Taking semiotic approaches in information system for instance, a number of breath taking examples of this are evident. Consider French, Polovina and Adam (1999), who penned a conference paper entitled "Semiotics for E-Commerce: Shared Meanings and Generative Futures". In this paper, they defined semiotics as the 'science of signs and shared meanings which is thoroughly incorrect, although later they defined semiotics as the 'science of signs' a gloss which they did not attribute to its creator Charles William Morris (1938; 1970; 1946). Morris was an early to mid-20th Century North American 'behaviourist' semiotician writing in the tradition of Pierce. The incorrect definition provided in French, Polovina and Adam (1999) is due to their interest in proposing a "Shared Meanings Design Framework"- their attempt at a semiotic methodology for e-Commerce. As can be seen, 'shared meanings' is another consequence of Shannon and Weaver (1949).

Another misstep in the paper of French, Polovina and Adam (1999) is a prime example of uncritically appropriating theory second hand, and concerns the relationship between culture and communication which we take as signs of one form or another. French, Polovina and Adam (1999) adopt indirectly from Ronald Stamper (uncited although referenced) another

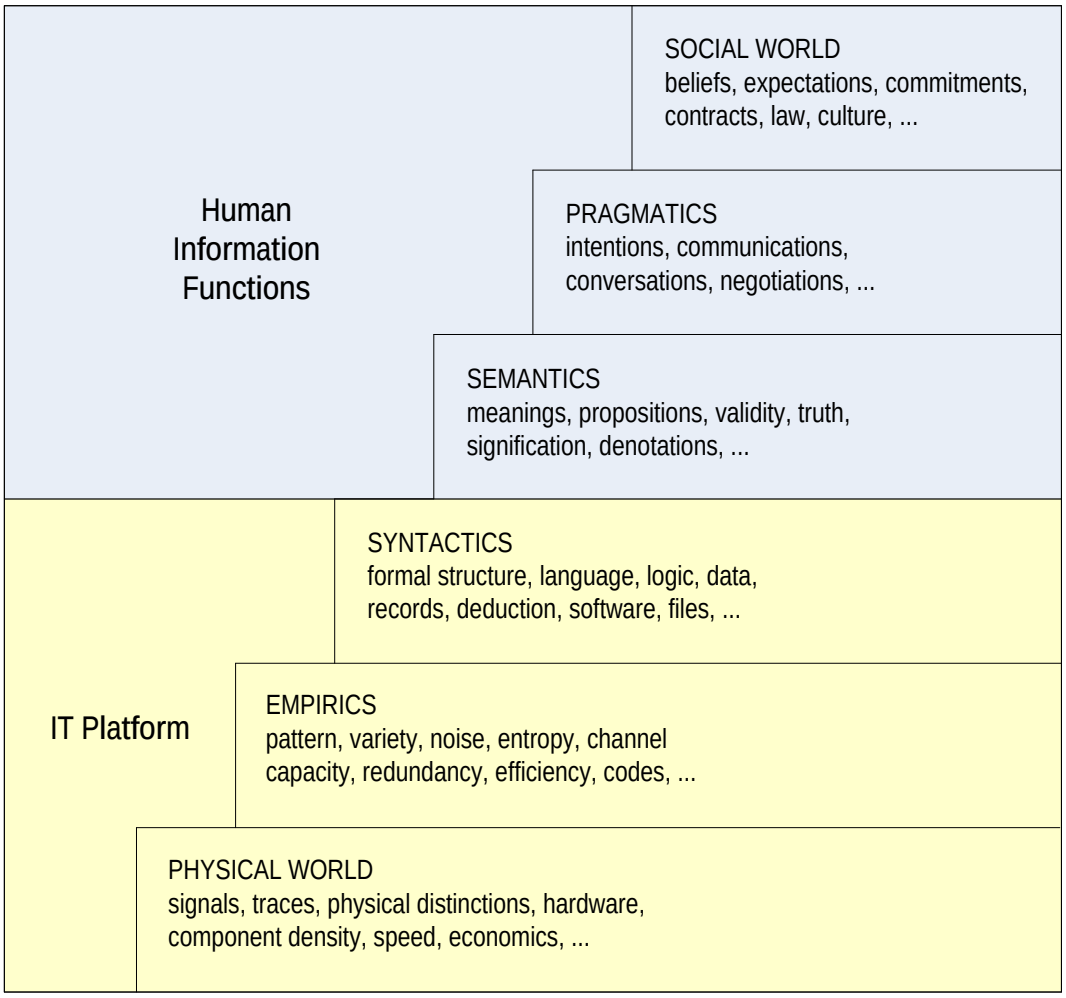
concept of Morris (also uncited), his definition of the sign. Morris's (1938; 1970; 1946) definition comprises three *simultaneous* dimensions: *pragmatics* the origins, uses and effects of signs, *semantics* involving what the sign refers to (signification and meaning), and *syntactics* or the formal aspects of language (syntax, morphology and phonology). This thesis is not concerned with the precise meanings of each of these terms but rather the fact that for Morris, these existed simultaneously for each and every sign. No dimension should be privileged over the other. But when we look at French, Polovina and Adam's (1999) utilisation of these categories in their Shared Meanings Design Framework we see that they become ordered into a hierarchy. This error dates to the early work of Ronald Stamper (Stamper, 1996; Stamper et al., 2000) and his *semiotic ladder*; see for example Stamper (1996:351) although the ladder predates this publication.

The semiotic ladder is shown in Figure 3.3. The syntactics, semantics and pragmatics rungs of the ladder are arranged as steps in a *hierarchy* giving precisely the wrong characterisation of Morris' sign. From a semiotic perspective, signs constitute the social world and are not somehow above one dimension of them, similarly there is no base level rung of the physical world. Again from a semiotic perspective, while there certainly is a real world our access to it is not independent of signs. The *empirics* layer is a direct reference to information theory as we have described it elsewhere in this chapter and again reveals how utterly ingrained this response is even despite the considerable theoretical arsenal of semiotics. Stamper (1996) and elsewhere, attributes the *physical world*, empirics and syntactics rungs to the IT Platform while assigning semantics, pragmatics and the *social world* rungs to the human information functions, as shown in Figure 3.3 (a). One can begin to see how ill conceived some of these categories are in Stamper's (1996) rendition of the semiotic ladder. Language is assigned to

the realm of syntactics, despite the fact as we will see that to have a theory of communication we need to account for meanings in contexts; that is to say language is thoroughly social.

Figure 3.3: (a) The Semiotic Ladder (after Stamper, 1996) and (b) its simplified form as an 'e-commerce 'semiosis' checklist by French, Polovina and Simon (1999).

(a)



(b)

SOCIAL	How can we best characterise the beliefs of the organisation as a whole? Are there cross-national implications involved?
PRAGMATICS	How will the proposed system alter internal communication(s) within the organisation or externally to customers? Are there established procedures for negotiation?
SEMANTICS	How will the proposed system alter internal communication(s) within the organisation or externally to customers? Are there established procedures for negotiation?

The media in which signs are embodied are consigned to the physical world of Stamper's semiotic ladder. Perhaps this is a view of magnetic stripes on a magnetic disc and yet as proposed in this thesis, media like the user interface or the web pages of an e-commerce site are certainly very complex semiotic entities that use multiple modalities. Other researchers in information systems who have an understanding of communication theory recognise the institutional (that is the social world) in the records and files that are processed by computers in organisations (Ågerfalk and Eriksson, 2004), and yet Stamper (1996) consigns this utterly to the syntactic rung. If as Stamper (1996:352) himself claims that "[t]he indispensible role which society and its culture plays in making signs possible is crucial to [his] ... treatment of semiotics" then the use of a semiotic ladder, even as a pedagogic devise, is dangerously misleading. The evidence of just how misleading can be found in the conference paper of French, Polovina and Simon (1999) who reproduce Stamper's Human Information Functions, see Figure 3.3 (b) and thereby, not even reproducing enough rungs to constitute a complete sign!

A prominent semiotic approach to communication and cultural studies, one which has been developed primarily within Australia, and which is compatible with all of the previously discussed requirements for a suitable theory is *social semiotics* (Hodge and Kress, 1988; Thibault, 1991) and its foundation discipline of *systemic functional linguistics* (Halliday 1978; 1985; Halliday and Matthiessen, 1999; Eggins, 2004). Following is a discussion on both of these meaning based theories of communication in the order of their development starting first with systemic functional linguistics - a theory of language - and then to social semiotics which has sought to expand many of the ideas proposed for meaning making in language to other modes of communication. Collectively, these approaches have been

referred to as *systemic semiotics* (Fawcett, 1986) or *systemics* in the contracted form used here.

3.5 Systemic Semiotics 1: Language Resources

The description of SFL as a model of language is based on the work of Halliday and Martin. Halliday (1978; 1985) built an elaborate model of language but Martin (1992), his doctoral student and eventual successor to the Chair of Linguistics at Sydney University, was able to simplify this enormous body of work by modularising the grammar into *strata*. Each stratum is responsible for a group of *linguistic resources* that contribute to the overall meaning of any text. For a description of SFL provided on this so-called *stratal model of SFL*, see Figure 3.4 (a). The major resources associated with each stratum are also defined.

Contexts - Situational and Cultural

All texts - including business websites - need to be analysed as manifestations of the cultures that in some small part help to construct and in no small measure are constructed by. This means that the approach required here to account for web systems from a communicative and meaning-making perspective needs to be able to provide or support a theory of context. SFL provides a theory of context - recognising that two distinct contexts exist. In SFL every text utilises genre and register strata and these are realised in language strata.

Following a distinction first raised by the anthropologist Malinowski (1923;1946), the first context is called the *situational context* and refers to the factors in the immediate situation that help to shape the language associated with the situation (Halliday, 1978; 1985). SFL theorises that this occurs in three specific ways, collectively referred to as *register*:

- by specifying the social actions and activities that are taking place by providing *experiential meanings* or meanings associated with experiences. This is referred to as *field*
- by specifying the social arrangement of participants during the communication constructing *interpersonal meanings* in language. This is referred to as *tenor*, and
- by specifying dimensions of the symbolic and rhetorical channels that are used creating *textual meanings* in language mode. This is referred to as *mode*.

Following Malinowski (1923; 1946), the second context is referred to as *cultural context* and this provides any completed act of communication by providing it with an overall structure that describes it conventional organisation. For example, when one buys bread in a bakery in an English speaking country there is likely to be a very specific organisation of the actions and language that enable a customer to specify and purchase a loaf of bread. That pattern is conventional and we learn it very young. Similarly, the arrangement of a home page with navigation down the left hand side of the page for Anglophone users and right hand side for Arabic users, is a generic patterns associated with web page organisation. There are two aspects to genre: the actual elements or stages in the enactment of the genre (sales request, payment) that form the sequence of events or social activities in which language took part, and the reproducible communication pattern which is referred to as a *genre*.

Language Strata

While the context strata was described from the top down (genre then register), the language strata will be described from the bottom up, defining phonology/graphology stratum followed by the lexico-grammar stratum ,then finally the discourse semantics stratum. The origins of and distinction between speech and writing (*phonology/graphology* stratum) is interesting in

SFL, they are considered as different kinds of language because they employ different kinds of language resources (the tone system in speech has no equivalent in writing). However, every language will have distinct phonology and in most cases graphology associated with speech and writing – this thesis is concerned less with distinctions at this level for the current study of websites is not of concern, even though this thesis is considering different writing systems in our case studies (English and Arabic). The *lexico-grammatical stratum* provides "... us with the means to combine sounds into words [the lexical part of this technical term], which can then be arranged in different grammatical structures to make different meanings." (Eggins, 2004:116). The *discourse semantics stratum* is concerned with how meanings (semantics) are assembled into extended stretches of language to create functional communication (discourse). A very brief description of language resources in SFL has been provided, but of course these only really relate to the language aspects of web pages including for example, labels used in navigation, the language used in hyperlinks, and of course the extended stretches of language associated with articles and other textual media on a webpage. In the next section, the idea of developing a social semiotic perspective of web pages is discussed and some units of analysis associated with non-language resources on web pages is also introduced.

Language Resources at the Interface

Language is the most obvious resource to consider when developing a website. It is the starting point for the development of business websites because written language is the main mode of content for a business as it is the primary mode for business information. It is also the modality that can be translated for use in other countries and cultures - while you can translate natural language from one language to another you cannot translate a non-language content from one mode to another.

There is considerable support within modern development environments for creation and display of non-English languages as well as language. There is also some direct browser support for the translation of web page content developed in one language to be displayed in another, however, all these services are generally limited to European languages and a handful of Asian languages. There is reason to believe that in the future more and more languages will be supported. We also trust that the technical challenges of providing good translations will lead to an improvement in the quality of these translations. The practices associated with internationalising websites and also regionalising websites concentrate on getting the language resources correct because these are the resources that require the least amount of local contextual experience. In some cases, the content can be simply translated and the effect of cultural differences between the production and consumption contexts may be minimal in most cases.

Genre or the cultural context of the text (website or web page) manifests itself in several different ways - as a language resource and also visually (considered in the next section, 3.6). Given the rapid technical development of the web, its virtually ubiquitous deployment around the world, and the commonly shared applications for it - primarily informational and commercial - we might not expect to find evidence for generic differences at the interface. We might not necessarily expect to see the imprint of a culture on a website, particularly as this study's interest is in the curtailed area of eBusiness websites (not those with eCommerce functionality). However, when describing genre associated with language resources, then genre manifests itself subtly and pervasively in the structural organisation of all language content (articles, news posts, headlines) as well as the conventional staging that may be used for workflows like, for example, online purchasing using a shopping cart. By

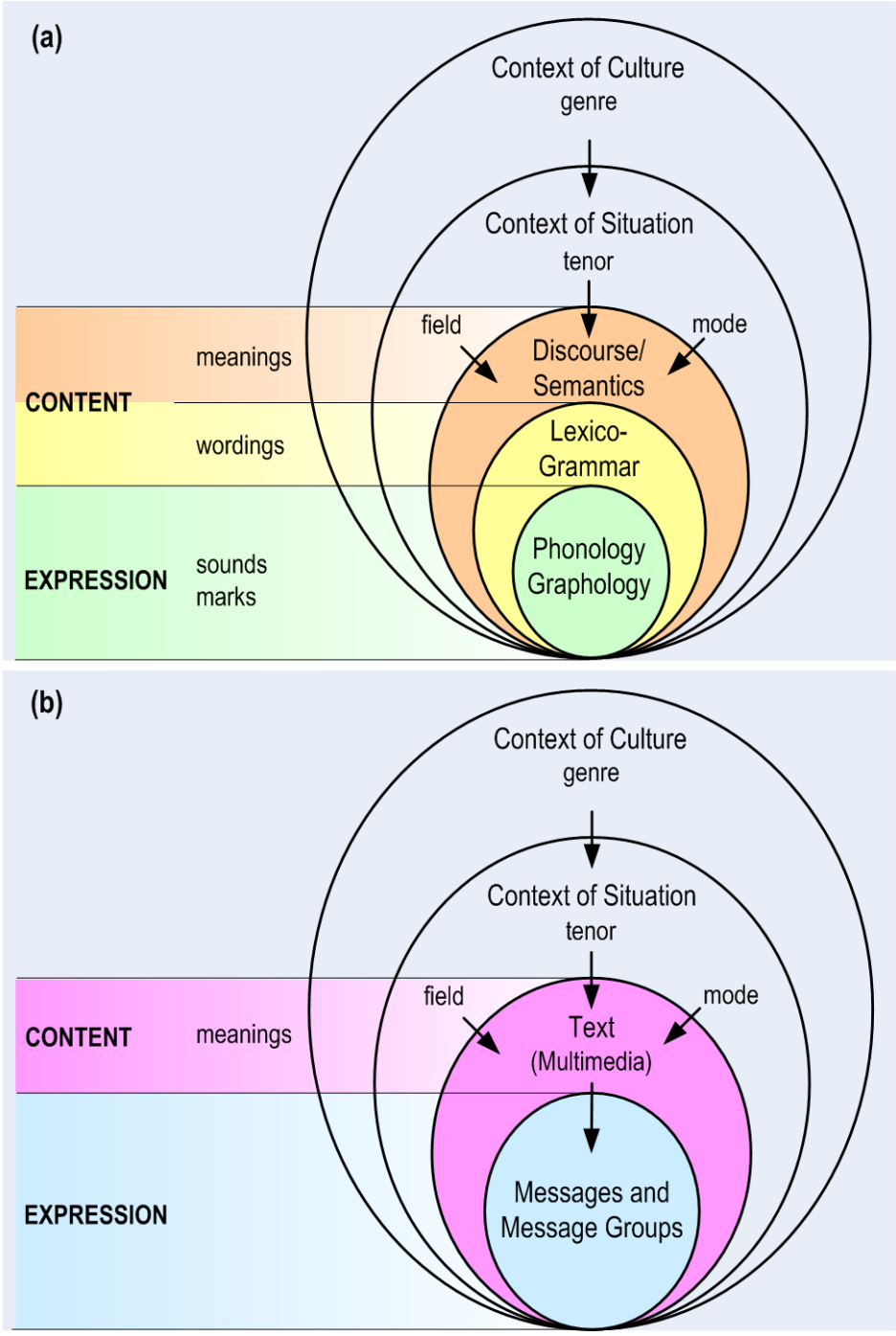
their very nature generic conventions are often unthinkingly applied by web developers as they are by everyone else in a culture. Also, the very tools, production environments and practices that are used to develop web systems often have these assumptions built directly into them. In part the development environments have been responsible for the creation of a similarity in websites - this will slowly diversify as has been the case in the history of the book.

The situational context or Register is of immediate and direct relevance both in production and consumption of web content. Users need to be convinced of the relevance of the content to them and their social group - this is the purpose of *tenor*. Tenor varies according to the frequency of *contact* that might be expected of the user visiting the website (frequent or occasional), the degree of *affective involvement* (emotional engagement) that may be expected (high or low) and the *power relationship* between the user and the content provider (equal or unequal). So important is this particular resource that companies must directly show and write about who the site is intended for. A bank, for instance, is obligated to show happy customers. Similarly, websites must look like the social actions and activities that they are engaged in- this is the purpose of field. A food company must signify in its media the clean environments in which their healthy products are grown and made; a high tech company should show the amazing products they produce and the use of them in the world. Field involves primarily *lexical resources (words)* that signify the actions and activities taking place- the wording of menu items, links, navigation labels, and so on. Lexical resources can also be organised into classification systems, called *system networks* (see Chapter 4), that describe the social actions and activities that are provided or supported by specific business websites. These field related register resources can most easily be

reinforced with direct pictorial representations, for example, the 'tractor' being developed and sold through a corporate website can be reinforced at the interface by a picture of a tractor in question.

The mode of the language resources involved in the role that language plays in the interaction (Eggins, 2004:90) will varies according to the degree of possibility of feedback between the business and the user referred to as the *spatial or interpersonal distance*. If we are strictly discussing the language resources, then of course, a website looks like a book and there is no real possibility for immediate feedback with its authors. But when looking at a component on a web page that supports a 'contact us' option, by allowing a user to send an email for example, then there is slightly greater opportunity to contact a representative of the company. Perhaps the website supports a live chat function to assist its customers, and in this case there is a very high likelihood of interaction (that's it purpose after all) and the spatial or interpersonal distance for that part of the functionality will be small. The second mode dimension ranges according to the 'distance' between language and the social process that is occurring. This continuum is referred to as the *experiential distance*. At one end, language constitutes the social process and language is involved in reflection- reading a book or indeed a website is an example of this. At the other end of this continuum, language accompanies the social process and language can be considered as a kind of action. An example of this is the shopping cart for instance. In eCommerce sites, the core functionality involves experiential distance where language is (commercial) action, but in the eBusiness sites considered here, language is seen as constituting the social process as users browse our websites.

Figure 3.4: (a) The stratal model of Systemic Functional Linguistics (after Martin, 1992) aligned with language based double content, single expression planes (after Hjelmslev, 1963); (b) shows the single content and expression planes for non-language resources. Cross reference to Figure 3.2.



3.6 Systemic Semiotics 2: Non-language Resources

In Figure 3.4 (b), a similar stratified approach to account for the non-language resources on web pages and websites is applied. First, the contexts of non-language resources and then the multimedia or multimodal texts that are formed from these resources as discussed. The thesis then considers how these media hang together to give the user the experience of a completed act of communication at the interface is considered by proposing that we adapt the SFL concept of cohesion to explain how meanings at the interface can be produced and consumed.

Contexts of Non-language Resources

For the purpose of this thesis the definition of genre as the cultural context developed by Malinowski (1923; 1946) and the relationship of realisation between them and the constituent non-language resources employed websites and pages is retained. The link between language and non-language resources is most evident with genre. As we will see genre on web pages and interfaces also has a non-language or visual component (see next section). Genre involves conventional staging in language but just like written language genres (think memos, financial statements, books) these are often reinforced using visual cues. A memo conventionally has a From, To, Subject and Date structure which enables us to recognise one well before we are close enough to read one. Similarly, this specific generic arrangement of language resources has a conventional visual arrangement that enables us to quickly recognise this genre from say a letter from across a room. This relationship between language and visual form is again something that is being reinforced by the technical aspects of the production environments in which web pages are developed. Templates enable arbitrary media to be formatted based on style sheets (for a description of Cascading Style Sheets in web design see Niederst, 1999:389-428). Templates enable the information structure of the page to be separated from the formatting, enabling the same information and

media to have a different arrangement and format on the screen. So important is this to brand management and marketing in general that an entire business sector has been developed about supplying high quality and aesthetically pleasing templates designs. As users increasingly accept the web as a legitimate form of communication, there are expected (that is generic) ways of organising visually, the layout of pages. Not surprisingly, one of the first and still most popular arrangements of links down either a left or right hand side of the screen with a banner at the top and content in the remaining space emerged simultaneously with the first graphical user interfaces.

When considering the relationship of register in language and non-language resources there is evidence of a direct relationship between field, tenor and mode relations. Non-language resources are by definition two-level semiotic systems as previously defined in Section 3.4. As such, these resources are highly *polysemic* (Noth, 1990:34) that is their meanings are highly dependent on the contexts in which they are found. Text about a social action and activity withdrawing money from a bank can most closely be associated with a picture of someone being served at a bank counter. Here one can see for material actions and activities a field correlated pictorial resource. For services, the ability to provide a close equivalent for a given field becomes more problematic. Web developers will tend to provide metaphorical or increasingly abstract representations of service. ‘Risk free’ banking might be associated with the picture of a strong superhero while ‘quality’ in a hotel might be signified by a beautiful arrangement of flowers on a table. There is no direct relationship between the image and the language resources, but there is a kind of semantic relation that links the two- part by their proximity to each other on the web page and in part because the user can relate them together in an abstract way.

Not surprisingly the polysemic nature of pictorial media is much more difficult to internationalise or regionalise because it requires much more familiarity with a culture to unpack its meaning - which are often metaphorical as demonstrated. When internationalising websites it is usually the non-language resources that are left untouched. They are expensive to make, and change, and are often associated with issues of branding which web developers often do not have any control over. But due to the fact that non-language resources are also interpreted from the perspective of the culture and the situational contexts of use, it is these resources that can most easily lead to misunderstanding or an infringement on or breaking of taboos for a society in which the web page is consumed.

Multimedia or Multimodal Texts; Messages and Message Groups

To acknowledge the contribution that non-language resources make to websites and web pages the proposed definition needs to include texts realised in any media. This thesis is in fact, using texts in the communication and cultural studies sense of the term. To distinguish between conventional language and non-language texts we can refer to web systems as *multimedia or multimodal texts*. Multimedia or multimodal texts consist of messages which can at lines be organised into message groups.

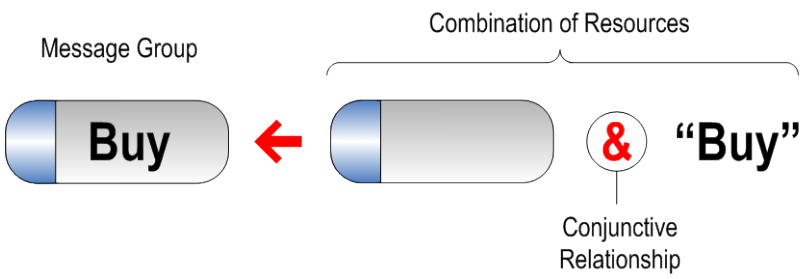
A *message* is defined as the smallest distinguishable meaningful unit. In SFL it is the clause, but in other media it could be a range of attributes that make up a given form of media. What is common to messages independent of the expression in which their content is realised is that they will have the following properties:

- *directionality*: that is a message has a source and a goal
- *situational context*: as previously defined

- *social process* - in that it is formed within a social process through which meanings are made or *semiosis* (Nöth, 1990:169-174) and the message will always be about something that exists outside of itself and is connected to the world in which it refers - a property called *mimesis* (Nöth, 1990:124).

It is not sufficient to simply think of interfaces as consisting of isolated messages on a screen - thinking of them this way is like thinking of houses as constructed of bricks without recognising the fact that they are arranged into intermediate structural units - doors, windows, walls and so on. If multiple media are used to construct a particular resource then it will form a *message group*. The term 'group' is used because the constituent media contribute specific messages to the overall meaning associated with the resource. A message group is formed out of a combination of resources (a word image etc) connected together in a particular kind of *conjunctive relationship*- both media are associated or bound together and their meanings are unpacked as a unit. Figure 3.5 shows how a Buy button on a web page is unpacked as a unit 'click this [because it's a button] to Buy [execute a function]'.

Figure 3.5: Unpacking the meaning of a 'Buy' button



Multimodality at the Interface

Several sets of semantic language resources that are relevant to our concerns independent of whether we are talking about systems, user interfaces or web-based systems have been described. The discussion has concentrated on language media because for the most part these are the most extensively used for telling users about the interface. However, images also need to be accounted for at the interface. Images in the form of icons, symbols, cartoons and pictures are most often used in the following ways:

- to *compositionally break up blocks of text on the screen*- to either signal the existence of different texts (a shopping basket for purchasing information), or to redundantly or explicitly signal different regions on the screen. For example, in Figure 3.6, different background fills and zones on the screen signalling different sets of messages where (a) body text and (b) copyright information;
- to *amplify text meanings* by either drawing attention to a particular text (through the use of symbology or typology) or to otherwise form cohesive ties with text- to duplicate or amplify the meaning of the text - for example arrow symbol draws attention to the text (c) in Figure 3.6;
- of course they are also used to *create message groups* like for instance, the 'Buy' button on a website, yet for the most part it's the label that carries the burden of the message- for example, the Navigation text buttons on this page (d) in Figure 3.6.

Most of these static, structural properties (colour size, etc.) evident on the screen are reinforced by the *semiotics of layout (composition)* as for the example, in Figure 3.6. Despite the fact that this is a template design for a webpage and only contains Latin filler text, it is the semiotics of its layout that positions its audience to expect certain types of meanings in

certain types of location. The semiotics of layout conforms to various layout conventions which audiences expect to see and which make the interface interpretable - a visual interface analogy to the generic conventions used in film making and story-telling.

Figure 3.6 Non-textual resources are used to compositionally break up blocks of text on the screen, amplify text meanings, and create message groups, see text for explanation of each region.

There is a sense in which we need more precise descriptions of the relationship between different kinds of media on the web page of websites. This thesis starts by trying to understand how a message/s in one media relates to another message in that media. Taking language as a guide (as explained by Eggins, 2004:279), Halliday proposed a system called *expansion* in which the meaning of one clause could be expanded upon by subsequent clauses. In systemic functional linguistics the clause is considered as the elementary unit of meaning. He identified that expansion could occur in one of three ways:

- *Elaboration*: a relationship of restatement and denoted by =
- *Extension*: a relationship of addition or variation and denoted by +

- *Enhancement*: all other relationships in which one semantic resource can be said to enhance another including relations of space, time, cause and condition for example, and denoted by x

Because these are very abstract categories, they occur in different guises throughout the language system. We could use this system as the starting point for considering the kinds of abstract relation that occur between, within and across different media found in user interfaces or web pages. Media can enter into a relationship of *elaboration* with each other by further restating it in some fashion. By definition, the new media cannot introduce a new meaning but must remain in a relation of equivalence. In Figure 3.7, one can assume this has occurred in the body text (a). Also, it is possible that the title 'home' enters into a similar relation with the body text (b). This also implies that the constituent media in message groups cannot be involved in elaboration because each media provides a new or alternative meaning - in other words elaboration cannot aid to apply as the unit of the message group.

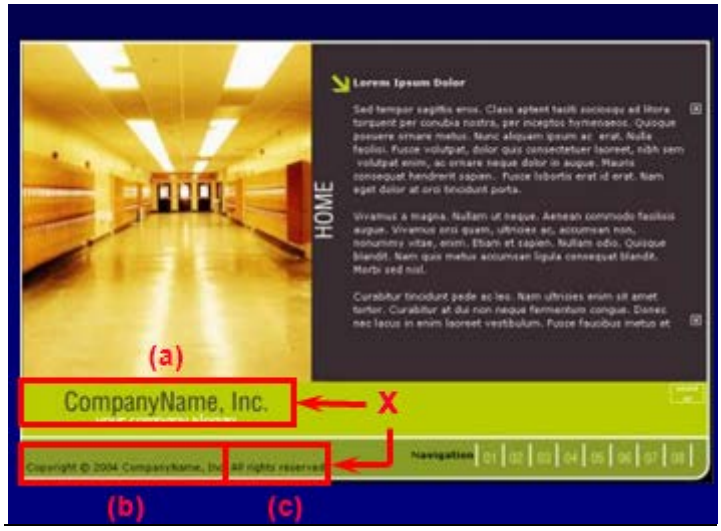
Figure 3.7 A web page mock-up showing an example of an image/text relationship of elaboration (=) where the text of the current 'page' is elaborated by the label describing it, 'home' in this case.

Media can also be said to be in the relationship of Extension (+) where one media extends the meaning of another by adding something new to it. The meanings added may be an addition, or a replacement, an alternative or a contradiction. We can use the idea of extension to define the logico-semantic relationship between media in a message group on an interface. In Figure 3.8, the following example shows a relationship of extension between the arrow symbol (a) and the caption (b). In addition to that, we may expect that the body text (c) is also extended by the caption (b).

Figure 3.8: A web page mock-up showing an example of an image/text relationship of extension (+) where the arrow symbol (a) extends the meaning of the caption (b) by providing extra signposting to the importance of the caption.

Enhancement (x) occurs where the message in one media enhances the meaning of another by qualifying it in one of a number of possible ways. The meanings enhance by means of reference to *time*, *place*, *manner*, *cause* or *condition*. In Figure 3.9, consider that the copyright date (b) enters into a relationship of *enhancement by time* with the company name logo (a). Likewise the 'all rights reserved' message (c) is entering into a relationship of *enhancement by manner* with the copyright text (b).

Figure 3.9 A web page mock-up showing an example of an image/text relationship of enhancement (x). The copyright text (b) enters into an enhancement of time with the company logo (a). The "all rights reserved" message (c) enhances by manner the copyright text (b).



Emphasis for Cross Cultural Web Systems Studies

A systemic approach enables us to move beyond simply considering websites to be collections of different media, to a more nuanced amalgam of language and non-language resources. The discussion in the previous section, has shown how for web pages, language supports and is supported by non-language resources of various kinds. This support is semantic and semiotic in nature. There is still a need to explain which resources should be emphasised for studying websites that have been developed within one culture for consumption within that culture, as well as websites that have been internationalised under the expectation that they will be read in different cultures. As previously discussed, the simplest media to 'convert' for use in another culture is language, because a translation of some kind exists. Any detailed discussion on language associated with web pages and websites is excluded because of this. The emphasis in resources are those that belong to two level semiotic systems like images because these cannot be directly 'translated' using the

same modality; one cannot translate an image in Western culture to Arabic culture or at least there is no first principle way in which such a translation is possible. The resources that need emphasis for cross cultural website studies include those resources that are used to represent conventions associated with web page layout and content organisation on the large scale as well as the semantics of images and text-image relations (see the previous section) within web pages. There is also a need for describing the navigation of websites. The purpose of the next chapter is to describe a methodological framework and within this, a set of methods from systemic semiotics that can be used to provide adequate descriptions of web pages and website structures from a semantic perspective.

3.7 Summary

In this chapter, the dominant theory of communication (Shannon and Weaver 1949) that informs commerce based disciplines including disciplines like marketing and information systems, has been critiqued The serious problems with the application of this theory is that even for one of its authors (Shannon) it is completely incapable of addressing any message semantics and so is not a useful theory to apply to studying communication and media in organisations and societies and so, is incapable of addressing cross cultural website concerns addressed in this thesis. Deficiencies in this theory can be used to help select theories of communication that are relevant to the topic of this thesis. In searching for alternative theories of communication, a redaction of Brennan's (1992) classification of communication theories - selecting sociological theories and semantic or meaning based theories as points of departure is used. This chapter identified a set of potentially relevant communication theories applicable to information systems, a reference discipline for interest in web systems, and focused the discussion on those that were actually found in applied IS studies - Speech Act Theory (SAT) and Systemic Functional Linguistics (SFL). The requirements for a suitable

communication theory were provided from a communication and cultural studies perspective. The chapter then discussed what kinds of basic units of analysis were used in semiotics, sign models, sign systems, linguistic signs and texts, and then focused on the much smaller set of semiotic communication theories that might be available for use in this study. It also examined how semiotic approaches can be applied badly in information systems, before arriving at a combination of systemic functional linguistics and social semiotics (referred to as systemic semiotics) as our approach to studying e-business websites.

Systemic semiotics applicable to web system descriptions was described in two moves. The first involved using SFL to consider the written and on occasion spoken language resources on web pages - forming a so-called three level semiotic system. The basic framework of this theory as recognising two different so-called strata of context situational and cultural after the work of Malinowski (1923:46) and three different language strata was defined. The role played by language resources at the interface or web page was then described. The second move involves considering the range so-called two level semiotic system resources that make up the remainder of the meanings on a web page or interface (images, graphics, video, sounds- not spoken language). The process of exploring web pages in this way followed. Web pages are multimedia or more specifically multimodal; texts consisting of messages and organised into message groups. By analogy, some general semantic organising principles of language (the system of expansion as developed by Halliday (see Eggins, 2004) to account for how media can be connected to each other on a web page, through relationships of restatement, addition or variation, or enhancement was applied. Websites are multimodal and so all contextual resources (genre and the field, tenor and mode dimensions of register) are diffused into the content and distributed around the web pages in a website. There are also many meaning making resources that are used to make this web page appear to be a whole.

There is a need to develop an understanding of how the messages of one media semantically reinforce each other. The specific goal here is to employ the theoretical arsenal of systemics (both systemic functional linguistics and social semiotics) to account for specific resources where we might reasonably expect to illustrate cultural differences if they exist at all. In the next chapter, the thesis develops a methodological framework and describes in detail a range of methods that will be used to analyse web pages on a range of Western and Arabic websites.

CHAPTER FOUR

Systemic Semiotic Web System Methodological Framework

4.1 Introduction

In the previous chapter, the theoretical foundation for an examination of websites as communication in cultural contexts was proposed. In this chapter, a methodological framework suited to assessing websites from this perspective is developed. Each method used in the framework is needed to help develop an assessment of the cultural dimensions of the website from the semiotic theorisation described in the previous chapter. Each method within the framework will be described in detail along with the reasons for its inclusion. The order or sequencing of application of each method will also be explained. As noted previously, most of the studies have stressed the value of the Internet in the business field. Only a few studies (Ahmed, Zairi and Alwabel, 2006) have dealt with the analysis of demographic effects on information systems and technologies and studies in the Arabic and Gulf States are underrepresented (Al-Asban and Burney, 2001; Al-Gahtani, 2004; Al-sukkar, 2005). The effect of suitable communication and marketing messages on the usage of e-business is similarly underrepresented in the literature. To analyse marketing messages on e-business websites, requires methods that allow us to understand the situational and cultural contexts in which these messages are produced and consumed. There is also a need to understand the semantics or meanings of these marketing messages. A social semiotic communication approach is applied to understand how marketing messages are structured, and can be structured on e-business websites in different cultures.

4.2 Describing the Systemic Semiotic Methodological Framework

The Systemic Semiotic Methodological Framework will be introduced in three sections. The first subsection deals with the major organising principles used to derive the framework - the need to describe the structural arrangements of web pages and the need to privilege bistratal, non-language resources over tristratal, language resources. The next subsection describes the groups of methods to handle structural and semantic descriptions of web pages and website structure and provides the overall organisation of this framework. The final subsection describes the general approach to the application of this framework to Australian and Saudi websites (detailed in Appendix A1 and A3 respectively) and the comparison of these websites (in Chapter 5).

4.2.1 *Deriving the Framework*

There are three organising principles of the Systemic Semiotic Web System Methodological Framework that constrain its organisation and are used in the next section (4.2.2) to derive its overall structure:

1. an emphasis on bistratal non-language resources over tristratal language resources,
2. an analytical approach to resources in order to describe their structural arrangement on web pages and websites, and
3. a synthetic approach to explain the semantic resources employed in web pages and websites

Each of these organising principles will be described in turn.

From the previous chapter, this thesis described in general terms, the language and non-language resources that comprise web pages and sites as complex texts because they possess multiple media. In systemic terms, this characteristic of web pages and websites is called *multimodality* and web systems in the most general case can be considered as *multi-modal texts*. While systemic functional linguistics is perfectly suited to analysing the written language on web pages (and also the less frequently occurring instances of spoken language), the approach taken will be to develop and apply a systemic semiotic methodological framework that places an emphasis on *non-language resources*. There are several reasons for this. The first is that website internationalisation practices will most typically involve text translation services because these are the easiest to specify in terms of source and destination languages and also translation costs are relatively well known although not necessarily standardised. No such standardisation practices exist for non-language (bi-stratal) resources and at best these practices would consist of 'stop lists' prohibiting the use of certain images, for example, based on 'rules of thumb' and guidelines which do not allow developers to reason about the resources that can or could be used. While we can translate between languages (this being one a first step in traditional development approaches to internationalising a website), layout, image, and image text resources cannot be directly 'translated' from one form or context to another. Therefore, the specific signs of cultural differences will be more evident in an analysis of non-language resources than language resources. The Systemic Semiotic Web System Methodological Framework is designed to look at cultural differences in bi-stratal web system resources.

The structural arrangement of resources on web pages must be first described in order to effectively relate the subsequent semantic analyses to it. The structural arrangement of resources is related to the kinds of web development practices that are used to create the web pages and websites.

Traditional web development practices are organised around distinct media types. The skills required to process images, for example, changing the colour tints or cast of images, resizing an image to fit a particular region on a web page, requires distinct training perhaps more likely to be found at an art school or college and involve specific tools and environments for example, Photoshop and other image processing and manipulation programs. Web developers that implement the so-called backend eCommerce functionality, like implementing shopping carts or creating adhoc shopping catalogues from databases, will tend to have computing training at a tertiary institution and will likely be familiar with application servers and specialised web database integration mark-up languages like Cold Fusion. Interestingly, Saudi web-developers use western web development environments (like Adobe Dreamweaver for example), and learn web development frameworks and languages (like JavaScript, PHP and so on). They are in a sense, already indoctrinated into western web development practices. The tools themselves already encode conventions of layout, organisation, and aesthetics which are also necessarily western as will be the standards for internationalising websites.

To understand web pages in websites, a methodological framework to conduct the proposed studies, must be developed in two ways. Firstly, it requires methods that can provide an analysis of each constituent resource; the way in fact each resource was created by web

development staff using web development practices. ‘Analysis’ becomes a second organising characteristic of the Systemic Semiotic Web System Methodological Framework. An analysis always involves breaking down something into its constituent elements whether that is individual media or entire web pages. However, while analysis provides descriptions, it cannot provide explanations (Ackoff, 2010). It is only when we consider how various semantic resources are considered in an integrated fashion in relation to a larger whole of which they are a part that we can come to understand how a web page or website can constitute meaningful communication. Ackoff refers to this as synthesis. Therefore, this thesis adopts synthesis as a third organising principle of the Systemic Semiotic Web System Methodological Framework. It is applied in three ways when considering: (i) image media, (ii) multimodality associated with specific media that is when media uses both text and images for example, and (iii) when considering entire page web pages. The specific methods used are described in subsequent sections of this chapter. In the next section, the structure of this framework is described.

4.2.2 *Designing of the Framework*

The framework examines *web pages* using four sets of methods: examining page layout [Methods 1], content organisation [Methods 2], and two kinds of content relations, the semantic aspects of images [Methods 3] and the semantic associations between text and images on web pages [Methods 4] (see the blue regions in Figure 4.1 pg. 10). The structure of the website is described using classification techniques applied to *global navigation*, and equally applicable to local navigation [Methods 5] (see the red region in Figure 4.1 pg. 10).

There are Page Layout and Content Organising methods used in traditional development practices. Page Layout is usually described in terms of page structure or design components (Curtis 2010:5-16) and wireframes (Curtis 2010:19-38). These are indicated using a yellow background within the Page Layout cell in Figure 4.1 (pg. 10) [Methods 1] (Clarke, 2011). These traditional methods enable us to analyse the *structure* of web pages; a requirement from the second organising principle of our framework. These structural methods emphasise the arrangement of physical features on the web page. However, we also need to interpret Page Layout from a *semantic* perspective as being meaningful in particular situations and cultures. Hence, a systemic semiotic method originally developed by Kress and van Leeuwin (1990:94-98) is applied to account for the compositional dimensions of book and magazine layouts. Using this method we can consider web page layout from the perspective of composition using visual dimensions like compositional salience, balancing centre, vectors, reading paths, framing and perspective. These terms and their interpretation will be explained more fully in subsection 4.3. Any images on web pages can be potentially analysed using this method. This method is also applied to the compositional aspects of banner images on home pages.

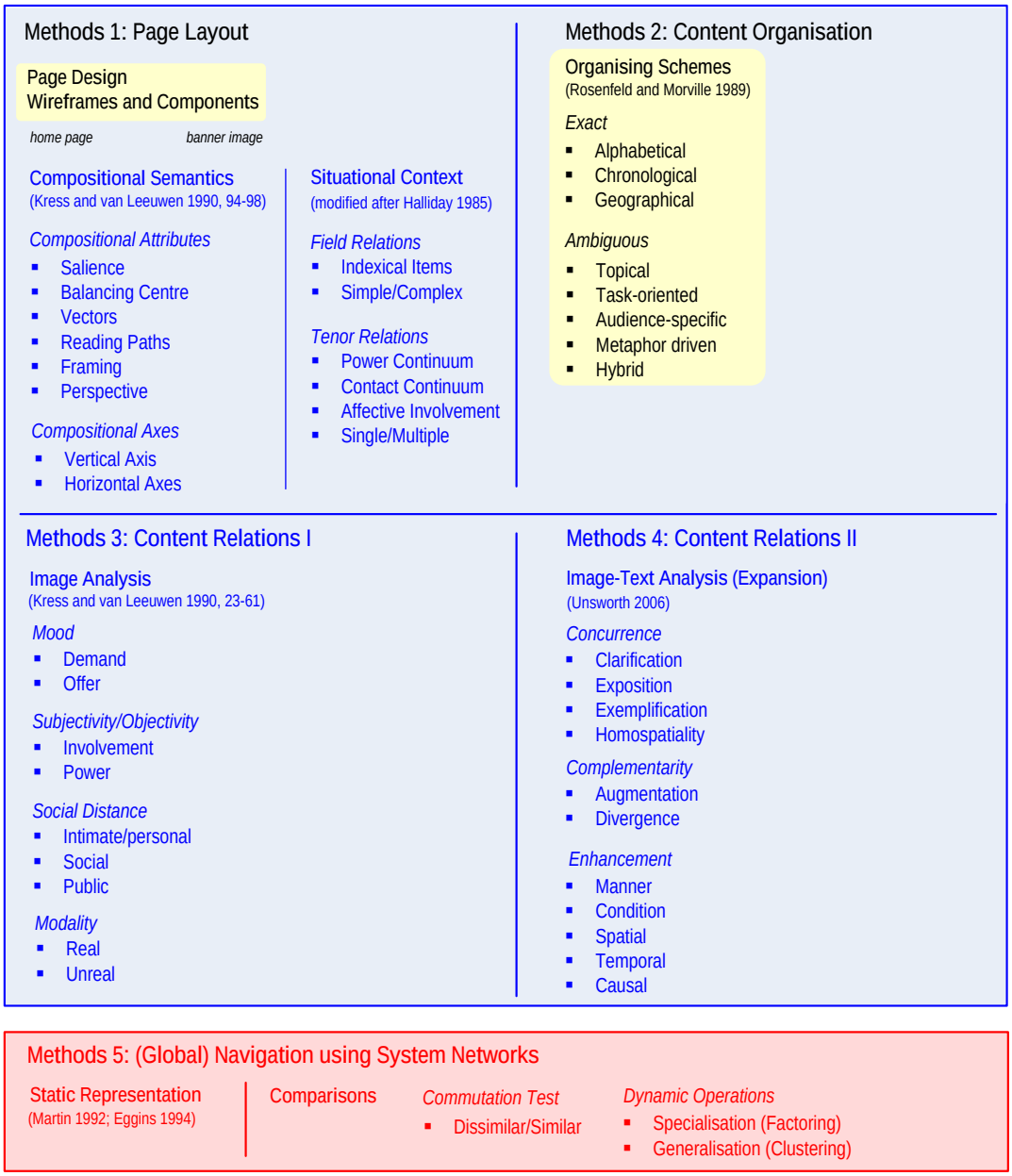
The organisation of content on a web page is usually described using traditional web systems development by means of Organising Schemes (Rosenfeld and Morville, 1989); see Figure 4.1 [Methods 2]. Organising Schemes are often associated with the discipline of Information Design (Mok, 1996:99). They are described more fully in subsection 4.4. Although there are a number of promising approaches, there is no equivalent in systemic semiotics to the idea of an Organising Scheme. In the Further Research section of this thesis, an approach to developing appropriate theory and methods to augment organising schemes is described,

however, for the analysis here this traditional method (as indicated using a yellow background within the Content Organisation cell in Figure 4.1)[Methods 2], is used.

So far, the structural analysis of web pages in Methods 1 and 2 has been emphasised. But only systemic approaches are useful when considering bistratal resources (primarily images) on web pages and when trying to explain how these resources function on web pages. These considerations involve the first and third organising principles of the Systemic Semiotic Web Systems Methodological Framework (review subsection 4.2.1). Two sets of content relations are explored here, those involving image analysis (Kress and van Leeuwin 1990, 23-61) and those involving relations that bind images to texts on web pages (Unsworth, 2007). These are described in more detail in subsection 4.5 for Content Relations 1: Image Analysis, see Figure 4.1 [Methods 3] and subsection 4.6 for Content Relations 2: Image Text Analysis, see Figure 4.1 [Methods 4].

Currently, the only method that deals with the macro-organisation of the website is the (Global) navigation using System Networks (see Figure 4.1) [Method 5]). To highlight the distinctiveness of this set of methods in the Framework, it is coloured (red) in Figure 4.1 to separate it from the micro-level web page analysis previously described (blue). Conventional web development practices are usually limited to making a distinction between local and global navigation systems (Rosenfeld and Morville, 1989) within informal and largely untheorised approaches to classifying content labels between these different navigation types. For example, chunking and filtering techniques. However, the semantic approach used here for describing navigation structures is based around so-called *systems networks* (Eggins, 2004:188-205).

Figure 4.1: Systemic Semiotic Web Systems Methodological Framework, see text for discussion.



A system network forms a superordinal taxonomy that is usually employed to describe linguistic resources but is applied here to navigation systems on websites. This is a novel application of this method, but an appropriate one given that navigation systems are after all devised to classify web content for current or prospective users. Systems networks are described in more detail in section 4.7.

4.2.3 *Applying the Framework*

Communicative frameworks like the Systemic Semiotic Web System Methodological Framework being developed here sit broadly within a qualitative research paradigm, the purpose of which is to learn more about what is relatively unknown and which the goal is not to measure so much as to offer insights (Ruyter and Scholl, 1998). This paradigm applies to the proposed communicative approach because relatively little is known about cultural dimensions and assessment of websites as evidenced by the paucity of approaches to studying it as described in Chapter 2 as well as the almost complete lack of extensive case studies outside of the United States. The purpose of this framework is to determine meaningful patterns of semantic relationships within website content and organisation. The qualitative (Miles and Huberman, 1994; Denzin, 1994; Patton, 1990) and communicative perspective (Halliday, 1978, 1985; Halliday and Matthiessen, 1999; Hasan, 1984, 1992; Fawcett, 1987; Eggins 1994; 2004) adopted here is not a dominant one within marketing although it has proved to be of use (Aasker, Kumar and Day, 2001; Spiggle, 1994; Deshpande, 1983).

The application of the Systemic Semiotic Methodological Framework is provided across three chapters (see the lower half of Figure 4.1 pg. 10). The web page analysis methods (shown in blue in the top half of Figure 4.2 pg. 14) are applied to a range of Australian

(Anglophone) eBusiness websites in Appendix A1 and to a range of Saudi (Arabic) eBusiness websites in Appendix A3. The websites selected for analysis in Chapter 5 were based on an extensive convenience sample of Saudi websites first published in Ahmed, Zairi and Alwabel (2006). Their approach was to try to examine companies in a range of different business sectors. Here, this paper is used as a point of departure for selecting Arabic websites. Many of these websites have changed since the authors published their paper and also the number of these sites have drastically declined since this research started, indicating a considerable and unexpected churn in the Saudi website cohort. As a consequence, the Arabic sample is not as extensive as that published in Ahmed, Zairi and Alwabel (2006). The evaluation has tried to use as many of these companies as possible, but unfortunately out of their 133 Saudi websites described in 2006, only 20 remain as at 2010 and three of these have discontinued operations within the last 12 months. The reader is referred to Appendix 1 for a list of the Saudi Websites identified in Ahmed, Zairi and Alwabel (2006). This convenience sample of Saudi websites has been organised into a small number of Business Categories developed by the Australian Bureau of Statistics (2011). To develop a list of websites to analyse in the Australian website cohort we simply identified a similar number of websites within the ABS Business categories. This cohort of websites is analysed in Appendix A1. This approach facilitates the comparison and contrast of web page analyses and site structures, presented in Chapter 5.

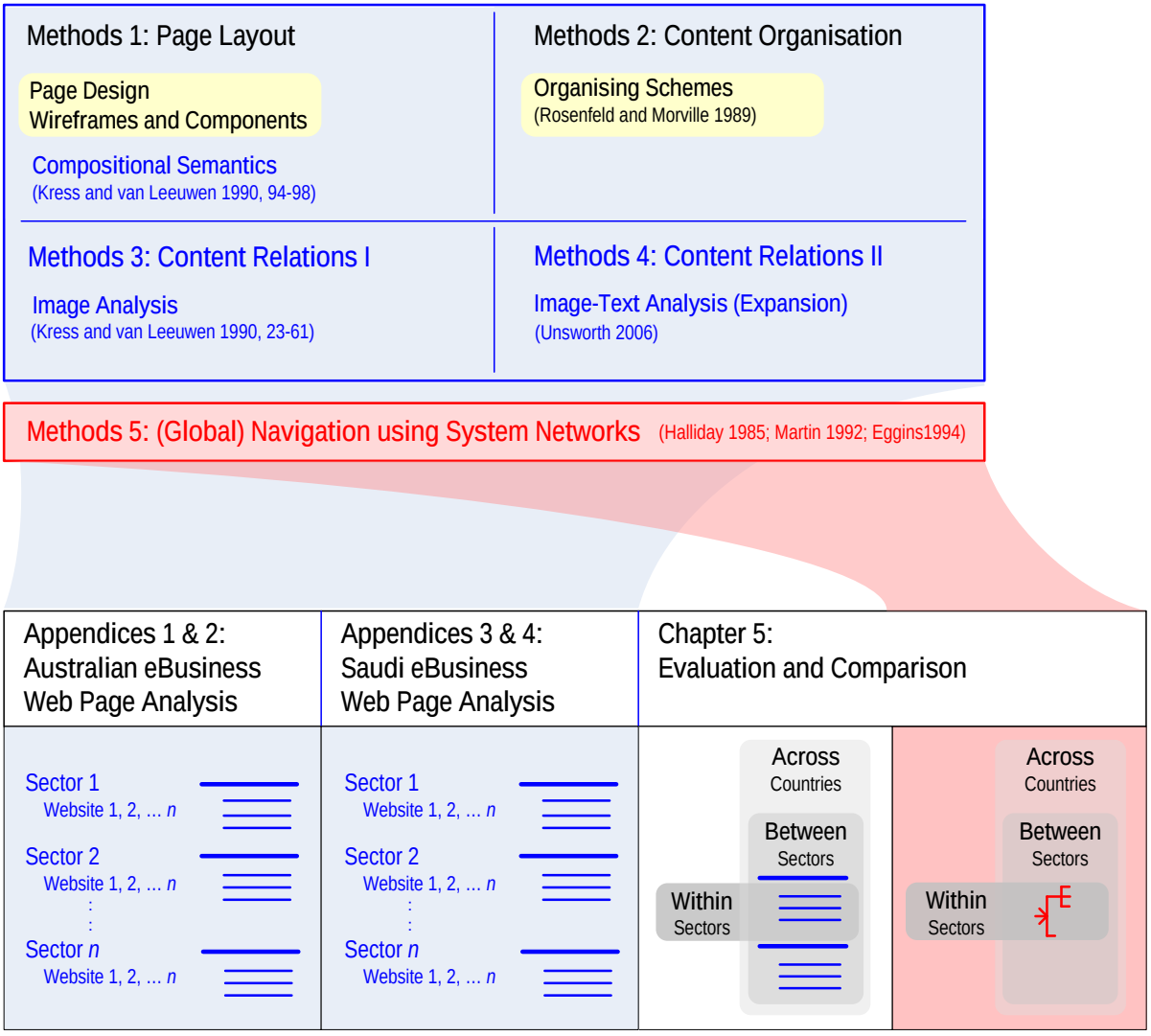
For each website, the front page is analysed because this is generally the most complex page in terms of layout and content. A home page will have the most money spent on it in terms of the media that are created for it and the design work lavished upon it. Most other pages deeper in the site structure hierarchy of the website tend to have simpler layout and emphasise language over other media and so have less complex content arrangements.

Appendix A1 and A3 effectively presents two sets of 20 case studies.

Chapter 5 represents two sets of comparative studies as described in Miles and Huberman (1984). The first half of Chapter 5 involves a comparative analysis in the form of discussion, evaluation and comparison of web pages (generally home pages) for selected Australian and Saudi websites. This is indicated by the blue shading of the first column of the Chapter 5 box in Figure 4.2. The results that form the basis for the comparative study of web pages are to be found in Appendix A1 and A3. For each country, the web pages of business websites within each business category are compared to each other for overall similarities and differences. The web pages are then compared and contrasted across the six different business categories. Finally, these web pages are compared across Australia and Saudi Arabia.

A discussion, evaluation and comparison of the global navigation systems for the selected Australian and Saudi websites, is provided in the second half of Chapter 5. This is indicated by the red shading of the Global Navigation [Method 5] cell 'flowing' into the second of two columns of the Chapter 5 box in Figure 4.2. Unlike the page analysis techniques, the global navigation technique is economical enough to be applied to Australian and Saudi websites and then to also form the basis for the comparative study of global navigation within the same chapter. For each country, the global navigation systems of business websites within each business category are compared to each other for overall similarities and differences. The global navigation systems are then compared and contrasted across the six different business categories. Finally, these global navigation systems are compared across Australia and Saudi Arabia.

Figure 4.2: The upper half of the diagram shows an abridged representation of the Systemic Semiotic Web Systems Methodological Framework. The lower half of the diagram shows in which chapter of this dissertation the results of the application of these methods can be found.



4.3 Methods 1: Page Layout

The term ‘layout’ refers to the semiotic or meaning making code associated with the spatial composition of elements on a page (Kress and van Leeuwen, 1990:94). These elements are the *components* of the webpage that serve specific functions. These might include a Title Area, Search Window, Banner Image, and various Navigation Areas. The structure of a web page or *page design* is briefly described in subsection 4.3.1. If one ignores the specific content contained in the spatial arrangement of a webpage then one is left with the so-called *wireframe* for the web page. Components and wireframes are discussed in subsection 4.3.2. Collectively, these provide structural descriptions of layout.

Semantic compositional methods are then described. Despite the fact that Systemics was developed out of a theory of language, the compositional methods described here avoid the use of linguistic concepts applied to non-language codes in line with the first organising principle of the proposed Framework. The concepts of pictorial composition as instantiated in these methods by Kress and van Leeuwen (1990) described below and adopted here are derived from those formulated within art theory by Arnheim (1956; 1982). Following Kress and van Leeuwen (1990:94-98 and 98-109), the semantics of composition is described using two methods. The first semantic method is referred to here as *compositional attributes* and identifies a number of discrete characteristics of composition (see subsection 4.3.3). The second composition method is referred to as *compositional axes* (Kress and van Leeuwen 1990, 98-109) (see subsection 4.3.4).

4.3.1 *Page Design*

A number of business websites utilise traditional approaches to web page design that are largely based on the technologies that are available to web developers rather than to any kind of theory of page semantics. Traditional approaches to page design emphasise the use of tables for layout of web page content, block-level elements to structure the web page content including heading elements paragraphs, horizontal lines, as well as the use of functional and logical divisions to break up the page into regions. The use of graphics, texts and particularly frames for navigation has led to the development of conventions for organising and separating content from navigation. A popular convention in this regard, based originally on the largely discredited use of frames, is the use of a navigation area (generally populated with text links or buttons) that runs down the left hand side of the screen (for English language sites) and down the right-hand side of the screen for Arabic language sites. A potentially infinite variety of navigation and content organising schemes is possible, but it is most illuminating to consider that there is only really a very small number of these in use.

Information architects on the other hand (Mok 1994), in general abstract away from the technical details of HTML and other standards, and typically consider a separation of content and navigation which is reflected in our approach to the semantics of web pages and websites.

4.3.2 *Components and Wireframes*

The definition of a webpage *component* is that it is a contiguous area of page design independent of any software elements. The concept of a web page component comes from the web design literature (see for example, Curtis, 2010). From a design perspective, webpage components are considered as reusable objects from which new web pages can be built. Dividing web pages into components is viewed as enabling designers of web systems to

better conceive, understand and communicate design. A webpage concept can be seen as a design solution to a reoccurring design problem, and that can be used as many times as necessary and which may never be used in the same way twice. Within computing science, information systems, and engineering, there is a concept known as a pattern (see the work of Alexander et al., 1977) in architecture that influenced the use of patterns in computing applications. Web components and patterns can be sprinkled within and across components.

Web page components are rectangular in shape, similar to conventional print media, as both are designed according to a rectangular grid. Indeed, for websites one of the most important design approaches is to use a table to compose a page and it is this that accounts in part for the fact that components are rectangular. At a more fundamental level, the technology of the World Wide Web is wedded to traditional print design principles that went before it and which make any other kind of design approach unthinkable. Reinforcing this is the economics of website construction where discrete types of media that compose a part of each page need to be developed by artists and craftspeople that use particular work practices and specific skill sets and technologies for accomplishing their tasks.

Beneath the layout and the aesthetics of pages and elements lays a spatial arrangement of all components on the page. If we were to ignore the specific content contained in the spatial arrangement of a webpage and to consider only the borders or peripheries of each of the constituent components then what we would be left with is the so-called *wireframe* of the page. Distinct wireframes are used for various types of web pages in a website. Often the design of a website will first proceed by creating the design of various web page wireframes to define the hierarchy of a website. For the websites examined in this thesis, a wireframe and label for the relevant components is provided.

4.3.3 *Compositional Attributes*

The first semantic method is referred to here as *compositional attributes* and identifies a number of discrete characteristics of composition. Layout involves in the meaning spatial arrangement of elements to form a coherent and ordered completed act of communication, in this case, a web page. The spatial arrangement involves the location of elements at the top, bottom, left and right of the page and also involves the proportion of these areas. Following Kress and van Leeuwen (1990:94-98) these include:

Salience

When we look at a web page we respond to its layout based in part on *salience*; does one part of the layout dominate or 'weigh' more than others and where on the page does this dominance occur. Is the page layout top-heavy? Does the bottom of the page dominate? As Kress and van Leeuwen (1990:96) state, there is a strong physiological as well as cultural basis to the sense of weight and balance (salience). Salience is a complex interaction between the 'reader' of the web page and the visual appearance and placement of components on the web page. A given element appears 'heavier' or more salient when it is moved to the top of the visual field and also to the left of it. Web developers often unknowingly exploit salience in the designs in order to draw attention to parts of the page that are more or less important than others. Users are typically unaware readers of salience on these web pages.

Balance and Balancing Centre

The complement of salience is *balance*; at what point on the web page does the visual weight of different web components appear to be in equilibrium. Regardless of whether this point or *balancing centre* is located in the middle of the page or at any other point on the page layout, this is likely to be where a web designer will place the most important message (or it perhaps

ought to be). The construction of web pages with specifically identifiable navigation regions make balancing centres more difficult to determine. This thesis specifies balancing centres independently and in combination with navigation regions if they are particularly evident in the page layout. In Figure 4.3 region B is the balancing centre for this home page corresponding to the 'Business Services' text as it is in the middle part between the top images and bottom images and it is very close to the most salience main left top image.

Vectors

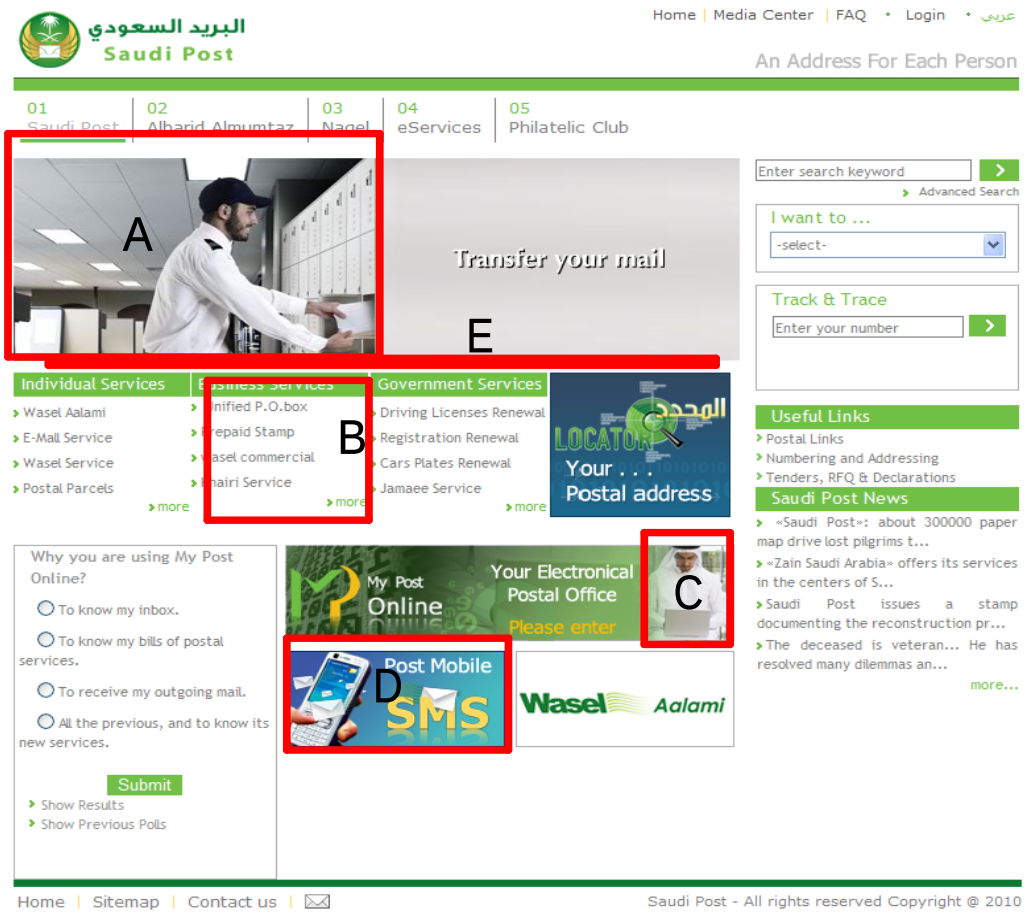
Salience, Balance and the Balancing Centre refer to regions on web pages usually associated with components, but the design of a page also involves *vectors* or lines of interest. These may be formed directly from given pictorial content. For example, the structural elements of buildings or the perspective view of a road receding onto a distant horizon, and can also be formed between abstract graphic elements, or a combination of both. Vectors lead the viewer's gaze from element to element, generally starting at the most obvious or salient element. Vectors are influenced by the types of elements that exist, their proximity or closeness to each other, and the angles between them amongst other things. In Figure 4.3, there are three evident vectors on this home page. The first is between regions A and C as follows (Hands+ White T-shirt +Face +Black hat). The second vector runs from region C to A as follows (Black 'Oqal' + Hands+ Face). The final vector in this web page runs from regions A to D as follows (White T-shirt + Fingers). It is the purpose of vectors to join up disparate and disjoint areas of the web page together; they act to both make a home page appear to be a cohesive whole and also to suggest specific meanings. For example, the first vector (A to C) suggests assistance being provided by Saudi Post staff to its customers. A reciprocal meaning of specifically Saudi people (indicated by the Black Oqal) is provided by the second vector (C to A). Finally, a vector from the traditional manual post handling

methods (also suggestive of care) being applied to the modern era with SMS services offered by Saudi Post (A to D).

Reading Paths

Composition sets up a reading path taking by a hypothetical or idealised reader within and between elements of the page layout. Not surprisingly the *reading path* generally begins with the most salient element of the page and moves to other less salient elements of the page layout. This path is not simply the linear left-right text organisation of English sites or the right-left text organisation of Arabic sites. Depending on the arrangement of elements in the page layout, the reading path may even be circular. While a reading path is the consequence of web page development practices, the path actually taken by a specific reader will not necessarily be the same. Reading paths are culturally and historically determined; different groups in society and generations within a society will privilege certain elements with more or less salience than others. A circular reading path exists in Figure 4.3, between regions A to D to C to A. The path starts from image A as the fingers points down to the other fingers in image D. After that, the white envelope in image D points up to the white “Thobe” in image C**.** Then the face and the black “Oqal” in image C point up to the face and black hat in image A.

Figure 4.3 Exemplifying the Semantics of Compositional Attributes and Axes (see section 4.3.3 for explanations of terms)



Framing

Elements of spatial composition can be connected together, or separated from each through the use of *framing* resources including continuous/discontinuous frames, background colours, textures, visual shapes or empty space. When elements involve multiple modalities (text and image) there can also be a semantic degree of strength between them from weak through to strong. In this situation where one modality encourages the other modality to be read or to have the same meaning then this is implies a strong framing. In Figure 4.3, region E represents the (very light) frame that separates the top part of the bottom part of the website.

4.3.4 *Compositional Axes*

Social semioticians have identified particular cultural differences associated with vertical and horizontal organisation in page layout. Developers will often unknowingly use cultural conventions when building web pages while users apply these conventions to read these pages and make sense of them. Developers and users who share cultures will share similar conventions associated with composition. The second semantic method, referred to here as *compositional axes*, describes the semantics or meanings associated with vertical and horizontal orientation on layout. These compositional axes include the vertical axis and the horizontal axis (Kress and van Leeuwen 1990:98-109) as described below.

Vertical Axis

Web pages are often organised along a strong vertical axis. Boundaries between components can separate a web page into zones or regions where different kinds of meaning are assigned. The upper region of the page usually has the greatest visual weight and salience and is normally the most highly valued in a culture. Often the upper region provides more abstract, generalised information associated with the ‘ideal’- it may be where the corporate logo is

placed on the organisation's website. This media is most likely to be graphic or digital images associated with the 'image', mission, or promise if related to a company, or more abstract, general or generic if associated with science or engineering. The lower regions of the page are often associated with the 'real' of an organisation, details about services or operations- typically consisting of language-dominant media. It usually has less visual weight and salience, and from the perspective of a culture is less highly valued. Regions on a page will differ in their modality or the degree of emphasis. The top is associated with the promised ('maybe') while the lower region is associated with the real ('is'). As Kress and van Leeuwen (1990:101) state "that which is most highly valued is a social/cultural construct, and thus what is most valued will vary from group to group- from advertising to science, from child to adult. Consequently, we do not always find the same kinds of things at the top of a layout. Nevertheless, the structure provides a powerful heuristic device for uncovering whatever it is that is most valued, most significant."

Horizontal Axis

Structural meanings associated with information are organised along a horizontal axis; sometimes this is referred to as a left-right structure. This particular arrangement is interesting in several ways. First, the horizontal axis in the social semiotics of page layout involves a direct adoption of the systemic functional linguistic information structure called the (Given) New structure (Halliday, 1985). The carrot symbol ^ means 'is followed by'. In language, 'given' information is that which is already known or that which is assumed. The brackets around 'given' indicate that it is optional, it need not always be present in language for example, while the caret indicates sequence so that 'given' is followed by 'new'. The 'new' or informative part of information is typically located after the 'given' on the right hand side of the clause. The horizontal axis in the social semiotics of page layout involves a

direct application of the systemic functional linguistic information structure. Second, both social semiotics and systemic functional linguistics were theories developed within English speaking countries and the left-to-right (LTR) handedness of the written language system was uncritically adopted into social semiotics from systemic functional linguistics. However, when we are dealing with written Arabic we are dealing with a right-to-left (RTL) directional language system and so we expect the relative locations of 'given' and 'new' to be reflected (see Table 4.1). So while the information structure is correct in principle, the cultural assumptions of this method were not properly considered by its developers. In this dissertation it is important to be mindful of which culture we are dealing with when we consider web page layout. When considering Arabic information structure it is treated as a reflection of what is found in Australian sites.

Table 4.1: The information structure for "the boy kicks the ball" in English and Arabic where the directionality of the structure is indicated by arrows.

English	*Arabic*
The boy kicks the ball	الولد ركل الكرة
Given → New	New ← Given

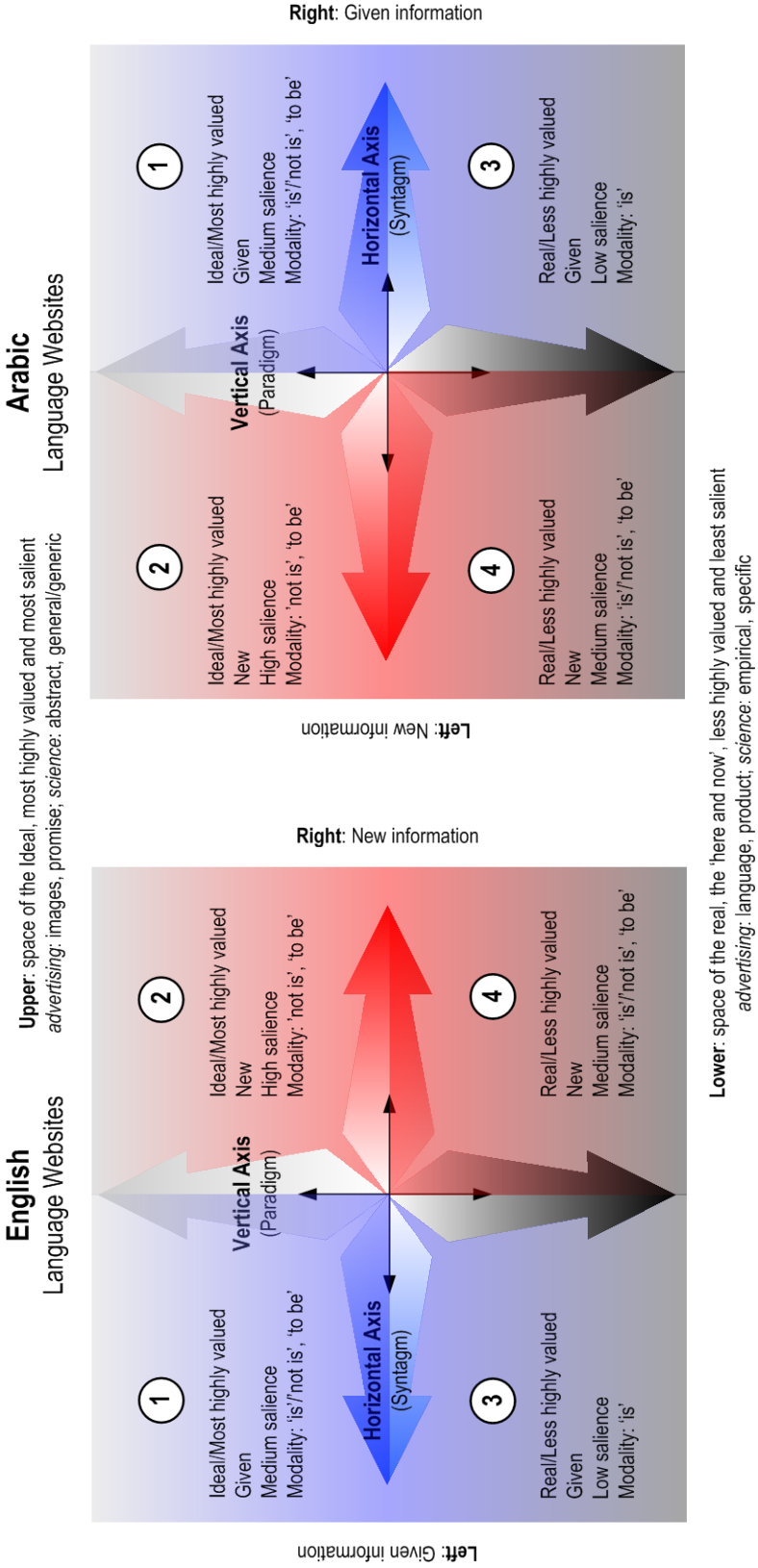
The compositional axes in Figure 4.3 can be exemplified. With respect to the vertical axis in image A, at the image in the far top left of the home page where it represents the strongest image, most heavily weighted and valued compared to for example, image C. Image A represents the promise and ideal aspects of post towards the customers (see E) which is different to images C, D which represent the real details of the operations of the company. When looking at the horizontal axis associated with Figure 4.3 we see that image C is on the far right of the screen which represents what the company wishes to signal to its customers as 'new' information about the 'modern' electronic operations provided by Saudi Post. This is in

contrast to the more ‘traditional’ mail sorting operations of a typical post office as shown in Image A.

The semantics of associated with vertical and horizontal compositional axes is summarised in Figure 4.5. The vertical axis represents a *paradigm* of possible options for ideal and real arranged vertically while the horizontal axis represents a *syntagm* or a selection of possible given or new information. These axes break up the page or the screen into four zones that also differ according to salience and modality (the degree of possibility through to actuality) (see Figure 4.5 pg. 29).

As Kress and van Leeuwen (1990:95) state the “… function of layout is integrative, and its principles apply not only to composite texts such as magazine or textbook pages, but also to visual texts which use only one semiotic [modality]… such as paintings and photographs.” This means that we can treat the web page as an image and apply these semantic techniques to the entire web page of interest, and we can also apply these techniques to any images available on web pages. If we are concerned with images other issues also come into play. When considering salience of images we need to consider *perspective* in fixed viewpoint

Figure 4.4: Semantics associated with the vertical and horizontal compositional axes (after Kress and van Leeuwen 1990, 99 and 108)



or three-dimensional compositions - a sixth compositional attribute identified by Kress and van Leeuwin (1990: 98) as well as foreground and background. In this dissertation we limit our use of the techniques described in 4.3.3 and 4.3.4 to the home page and any dominant banner images that exist.

4.3.5 *Situational Context: Field and Tenor Relations*

The content of components on web pages is the responsibility of different professional groups within the organisation as well as in-house or external media professionals, who develop images, video or text for inclusion into these components. Components can also be supplied with content via rich media feeds (for example RSS feeds) or supplied by intermediaries who syndicate and possibly develop it, either as open content or through commercial arrangements. In principle, the media contained in the web components of a web page can vary from each other according to the situational context, the actions and activities (field) as well as the participants being represented by the media (tenor). The third component of context of situation is called mode but is excluded here from our consideration as this dissertation primarily concerns non-textual media; see previous chapter for a description of Situational Context. Because of the website and media production processes, it is possible to have an added degree of complexity associated with marketing messages when it comes to actions and activities and participants. This implies that web pages may have components that consist of media that address unusual fields. In our case, unusual fields means media consisting of field relations that are not normally considered as involved in eBusiness, for example business and some non-business field. Web pages may also have components whose media address alternate kinds of audiences not usually expected for a given fields. It is entirely plausible to have individual components having multiple fields and tenors. Because of the bi-stratal nature of context in systemics, situational context is related to the cultural

context. Situations are related to the cultures in which they are permitted to exist. If there is a patterning associated with field, tenor or combination of the two within home pages belonging to sectors and/or countries then this will need to be accounted for and what it says about the relevant culture will need to be further investigated.

4.4 Methods 2: Content Organisation Schemes

The organisation of a website is closely related to navigation, labelling and indexing. Following Rosenfeld and Morville (1998), website organisation also consists of ways to organize the content on pages. Web page content consists of patterns called organising schemes that can be used in analysing and describing web pages. There are two major groups of content organisation schemes (Rosenfeld and Morville, 1998) which define the shared characteristics of content and which affect the grouping of items- *exact organisation schemes* and *ambiguous organisation schemes.* Each is discussed below.

4.4.1 *Exact Organisation Schemes*

It can be used when the objects or a collection of objects can be unambiguously assigned to a single category. Exact organisation schemes are said to partition information well. Searching this kind of scheme is also referred to as a know-item search. Exact organisation schemes are easy to design and maintain because there is little intellectual effort involved in assigning an item to a category. In fact, programs can be built to automatically index appropriate information in this form and many intranets and extranets use these schemes to organise content of various kinds on websites. Three exact organisation schemes are described below.

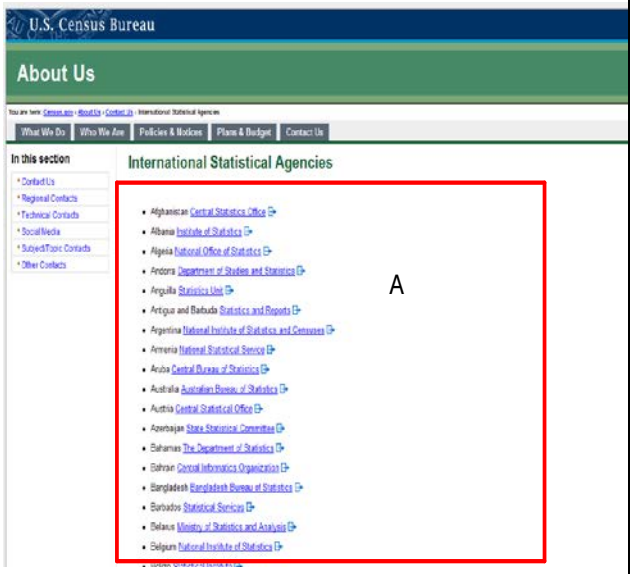
An *alphabetical* organising scheme promotes the rapid searching or scanning of a known item and also permits casual browsing of items. A well-known example of an exact organisation schemes is the white pages telephone book. If you want to search for someone's phone number you only need to know their name, although in some cases you may also have to know where they live. An example of an alphabetical organising scheme for information on a website is the list of international statistical agencies shown on the US Census Bureau site in region A in Figure 4.6 (a).

Temporal or *chronological* organisation schemes are easy to design and use, so long as there is general agreement about when a particular event occurred. Press releases are generally organised using this scheme. An example of a chronological organisation of information on a webpage is in region A of the web page from the Alyamamah University, Saudi Arabia in Figure 4.5 (b).

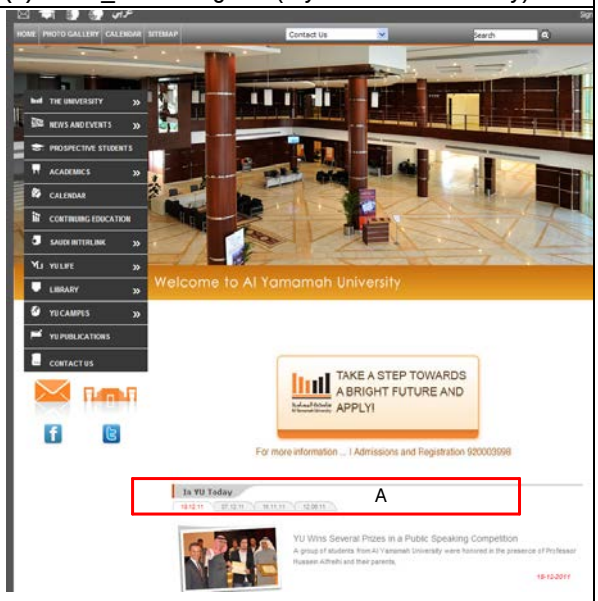
Spatial, social and economic data are frequently location dependent and are often best organised using a *geographical* organisation scheme. With the exception of border (political) disputes, geographical organisation schemes are fairly straightforward to design and use. An example of the geographical organisation of information is in region A of the home page from the Saudi Railways website in Figure 4.5 (c).

Figure 4.5: Examples of Exact Organising Schemes: (a) alphabetical, (b) chronological and (c) geographical.

(a) Exact_Alphabetical (U.S Census Bureau) A



(b) Exact_Chronological (Alyamamah University) A



(c) Exact_Geographical (Saudi Railways Organizations) A

4.4.2 *Ambiguous Organisation Schemes*

Ambiguous information categories attempt to classify objects or items into fuzzy categories, categories to which the items do not exactly fit. As a consequence they are difficult to design, use maintain and automate. However, as Rosenfeld and Morville (1989) remark ambiguous organisation schemes are in some senses more important and useful than exact organisation schemes, because people don't always know what they want until they find it. Five ambiguous organisation schemes are described below.

A *topical* scheme organises information by subject or topic. An example of a commonly used topical organisation schemes for content on a website is the yellow pages telephone book. In designing a topical organisation scheme, it is important to define the breadth of coverage for the scheme. Many navigation schemes when viewed through the lens of information centric organising schemes appear to be ambiguous arrangements of items. An example of an ambiguous organising scheme is just such a collection of labels in a Saudi Post web page (see Figure 4.6 (a) pg. 29). Another example is region B in Figure 4.6 (c) that represents the Saudi Investment Authority's classified services based on topic.

A *task-oriented* scheme organises information according to some kind of procedure. It requires that both the websites developer and the audience can agree upon the steps in the procedure. This agreement can be possible because the procedure can be employed to instruct the audience about what to do through the use of page layout and so on. Alternatively, the developer and the audience share a common culture and common knowledge. Figure 4.6 (b) shows an example of a task oriented organising scheme (region A) for information on part of

GMC site where users can customise the colour of a vehicle (a 2012 Acadia).

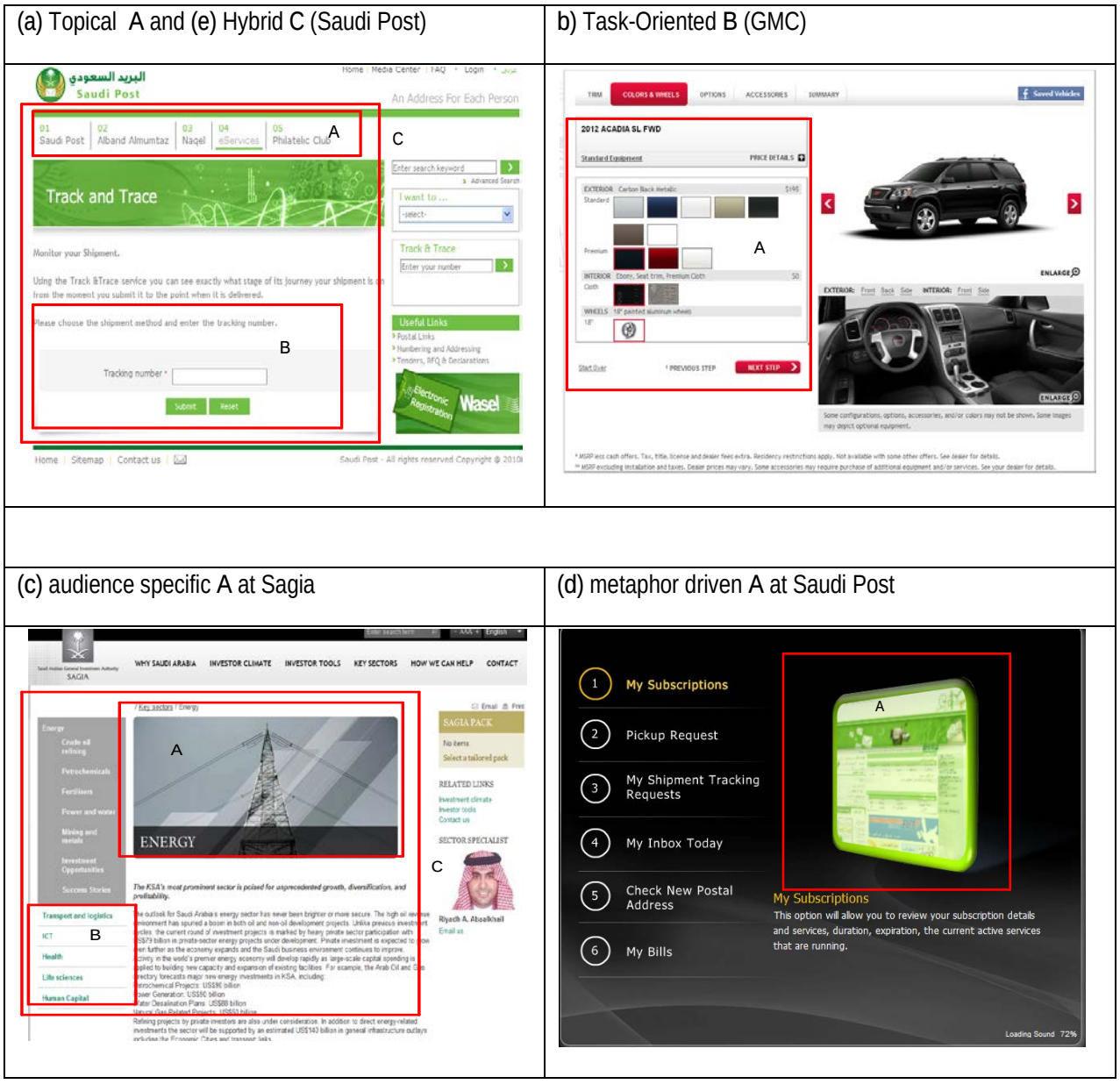
Complex sites often separate and logically group content by audience. So-called *audience-specific* content organisation is a common tactic to use when developing broad appeal Internet sites, as well as large scale intranets serving more than two or three types of audience. In Figure 4.6 (c), region A represents an Audience-specific (Saudi Investment Authority). This is because that the information in this website is specified for those foreign investors who want to have information on entering the investment of energy industry in Saudi Arabia.

Websites can also employ *metaphor driven* organisation schemes for logically grouping together content items with shared characteristics. In Figure 4.6 (d), region A organises information according to a metaphor-driven ambiguous organising scheme on the Saudi Post site. This is because that the information here is actually a 'virtual tour' of the different screens of the different operations that a customer may experience through implementing some of services in this website.

In general, a multiple or *hybrid* organisational schemes are used when no pure organisation scheme is available. In these circumstances, developers have few options except to mix elements of topical, task-oriented, audience-specific, and metaphor-driven approaches. Bad use of hybrid organisation means that users become confused about where to find an item. In general, it is best to group together on the page, items that use the same type of classification scheme. At the top of Figure 4.6 (e), the topical ambiguous scheme in region A, the exact

schemes in region B, and the search function of region C collectively form a hybrid organising scheme permitting the Track and Trace functionality for Saudi Post. Also region C in Figure 4.6 (c) represents an Ambiguous Hybrids (Saudi Investment Authority) as it combines two Ambiguous types.

Figure 4.6: Examples of Ambiguous Organising Schemes: (a) topical, (b) task-oriented, (c) audience-specific, (d) metaphor driven and (e) hybrid.



4.5 Methods 3: Content Relations 1- Image Analysis

A social semiotic method of image analysis is now discussed. The method used here is based on that described by Kress and van Leeuwen (1990:23-61). Like language, images are used to represent (i) social relations of the viewer-image, (ii) states of affairs in the world, and (iii) the structure of the world. We emphasise the 'social relations of the viewer-image' because how the producer of the image and the viewer are placed socially "… affects-perhaps determines both what the image is about, and its readings and uses." (Kress and van Leeuwen, 1990:23). There are four sets of attributes to consider in a semantic analysis of images, each of which is described below.

4.5.1 *Mood: Demands and Offers*

When we attempt to identify the social relations between viewer-image we are presented with the dilemma that, just like with written language, there is no apparent maker of the image. One dimension along which the social relation of the viewer image can be explored is through what is referred to as *mood*; images can be used to make two kinds of 'acts'. An image can make a visual *demand* realised by a vector formed by the glance or gesture of one of the participants in the picture makes towards the viewer. If an image 'wants' something from the viewer then "… one or more pairs of eyes [will look] directly at the viewer" (Kress and van Leeuwen, 1990: 27). What is being demanded depends on how the represented participant looks at the viewer (staring, smiling and so one). Alternatively images can make *offers* generally presented as objects for contemplation in images. In Figure 4.7 (a) we can see with image A that the mood here is one of demand realised by the direct gaze at the viewer. Images offer information but this is often difficult to encode into a picture and read

from it and so images are necessarily often accompanied by words (this is why the Image - Text Analysis method in the framework, has been included (see section 4.6).

4.5.2 *Subjectivity/Objectivity: Involvement and Power*

The second dimension associated with the interactive meanings of images involves the expression of subjective attitudes towards represented participants. While these attitudes are encoded as if they were 'individual' they are actually social in character- that is available possibilities for the producers of images (and also websites) to use in order to make meanings relevant to users, readers and customers. In Figure 4.7 (b) we see an image A that shows power here realised by a high angle upon the atrium of the Al Yamamah University in Saudi Arabia. In Figure 4.7 (a) we can see in image A that the involvement here is inclusion realised by frontal angle of the photographed participants looking out of the image to the reader/user.

4.5.3 *Social Distance: Intimate/Personal, Social and Public*

Social Distance is the term that has a relation to the aspects when people move when someone says something or moves to another place or sees something from another position or place depending on their social relation. The personal distance enhances what so called very close look to the people of the same image and the distance between them are very close as they are intend to remain very close friends and have a very strong relationship between them and it can be realised by a very close shot. The business distance has more formal character than the personal distance and it can be realised by a medium shot. The public distance is something further than the personal and business distance and it can be realised by a long shot.

4.5.4 *Modality: Real and Unreal*

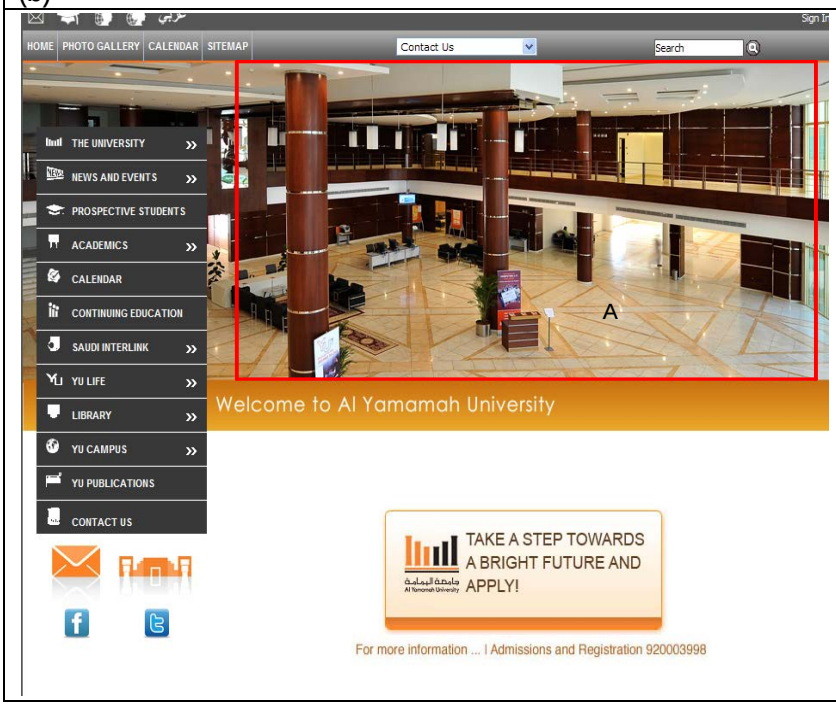
This aspect is realised by the appearance of colour, texture, light and shade. The modality values differ according to coding orientation and the general view of the image. When the contents of the image are true and represent real parts we call it a real modality. When the contents of the image are not considered true and represents the unreal parts we call it unreal modality.

In image A of Figure 4.7 (a) for example, we can see that the social distance here is medium signifying a more polite and business like framing of the participant; in a more intimate or personal setting we might expect a much more extreme close up for example. While, in Figure 4.7 (b) there is an example of beautiful, even opulent, modern architecture, nonetheless, the image is representing a modality of the real.

Figure 4.7: Exemplifying Image Analysis attributes of Mood, Subjectivity Objectivity, Social Distance and Modality, see text for descriptions.

(a)

(b)



4.6 Methods 4: Content Relations 2- Image-Text Analysis

So far, single modes on websites (text or images) have been examined. Users/readers of websites and web pages also interpret meanings simultaneously from multiple modes and so semantic techniques are needed to account for these complex multimodal meanings. In order to explain how image media functions semantically we need to also understand how these resources relate to other resources when combined. The specific method for exploring text-image relations is adapted from Unsworth (2006) who in turn, draws upon the work of Martinec and Salway (2005) and consists of three dimensions concurrence, complementarity and enhancement.

4.6.1 *Concurrence: Clarification, Exposition, Exemplification and Homospatiality*

Concurrence is a semantic relation involving some kind of ideational equivalence between image and text. Four types have been identified in Unsworth (2006):

- *Clarification:* occurs where the image(s) clarifies and enhances the text.
- *Exposition:* refers to the re-expression or re-explanation of the meaning of the image or the text in another or substitute method. As such we can say that the image and the text are of the same rank of overview. This type can include relations between single entities presented and enhanced both visually and verbally.
- *Exemplification:* involves the image being an example of what the text is saying, or the text may consist of an example of what is enhanced more generally in the image. The image is said to instantiate the text or the text instantiates the image.
- *Homospatiality:* occurs when two semiotic modes are interwoven into one spatially bonded homogenous entity. One example might be the word ‘COLD’ where each

letter has icicles on it, the letters and the icicles are bonded together to amplify the meaning.

Figure 4.8 (a) is the home page of Saudi Railways, image A shows an example of exemplification while image B shows clarification. Figure 4.8 (b) is the Saudi Post homepage and provides an example of exposition in image A and homospatiality in image B.

4.6.2 *Complementarity: Augmentation and Divergence*

Complementarity recognises that what is represented and offered in images and what is represented in language may be different but complementary. Unsworth (2006) identifies two kinds. *Augmentation* occurs when an image extends or adds new meaning to those realised by the text or the text extends the meanings realised in the image. The text or image offers meanings additional to and consistent with those offered in the image and the text. With *divergence* the types of ideational content between text and image are at variance with one another. The text in region A of the home page of Alyamamah University, Saudi Arabia in Figure 4.8 (c) is an example of augmentation whereas that of image A in Figure 4.8 (d), showing a page from the Saudi Investment Authority is that of divergence.

4.6.3 *Enhancement: Manner, Condition, Spatial, Temporal and Causal*

Enhancement as originally described by Martinec and Salway (2005) consists of causal, temporal and spatial relations between images and text. Unsworth (2006) added to this list, including enhancement by condition and manner. Enhancement as a set of techniques for isolating the relationship between image and text seems to be based on a modification of work by systemic functional linguists working on language techniques collectively called circumstance (see a comprehensive description of circumstance in Eggins (1994:237-239)).

In this thesis, Unsworth's expanded version of enhancement which includes image-text relations of manner, condition, place, time and cause between images and text as in some cases the verbiage enhances the image, is adopted.

An enhancement of *manner* is similar to its language namesake. It can be distinguished from others by answering the following kinds of probes or questions designed to reveal it. How does an image extend the meaning of an associated piece of text? With what image elements is an enhancement by manner accomplished? An image of a medical procedure may show the means or manner that enhances a description of a medical procedure. A discussion of how the medical procedure is done might be enhanced by showing a very modern operating facility thereby suggesting high quality health care. The region A of a web page of the Saudi Investment Authority in Figure 4.8 (d) is an example of enhancement. Here, the text 'Why Saudi" is enhanced by using a photograph of men dressed in traditional Saudi attire. The enhancement is by manner in this case because 'Saudi' is being enhanced through the use of Saudi clothing. An enhancement of *condition* is where the verbiage constructs the condition and the image constructs a consequence of the condition. An example might be 'pain management' illustrated with an image of someone shown grimacing in pain.

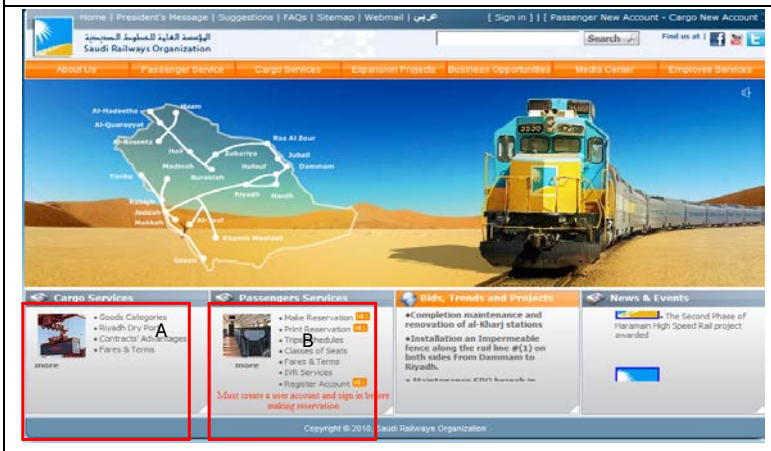
The *temporal* and spatial arrangement in text-image relations is analogous to locational circumstances in language (see Eggins, 1994:238). The purpose here is to try to see if there is any kind of temporal association between the text and image, or alternatively if there is any *spatial (locational)* connection between the content of the text and image. The text 'the parcel was delivered on Saturday night' might be exemplified by an image that shows a busy night time photograph at the parcel's destination. Alternatively, the locational or spatial semantics

by simply showing a shot of a parcel being delivered at the front door can be emphasised. This suggests the spatial enhancement of a textual description of the event. The *causal* enhancement in text-image relations is analogous to causal circumstances in language (see Eggins, 1994:238). Here an attempt to deduce if there is a cause between text and image is made. In a news story about people surviving the sinking of a cruise ship due to local fishermen rescuing them from the water, an image of the fisherman retrieving people from the sea could be said to be causally connected to and therefore enhancing, a textual description of the incident. Causal enhancement is generally a relationship between text and image that results from a sequence of time ordered events.

The categories of concurrence, complementarity and enhancement between text and image that Unsworth (2006) collectively calls *expansion*, how one media 'expands' the meaning of another, has been described. But Unsworth (2006) also identifies an equally important system called *projection*, which like its equivalent in language (Halliday, 1985), involves verbal or mental or perceptual relationships. Unfortunately, this system is still underdeveloped especially in new media (see the discussion in Unsworth (2006:1201)) and so it is excluded from use here.

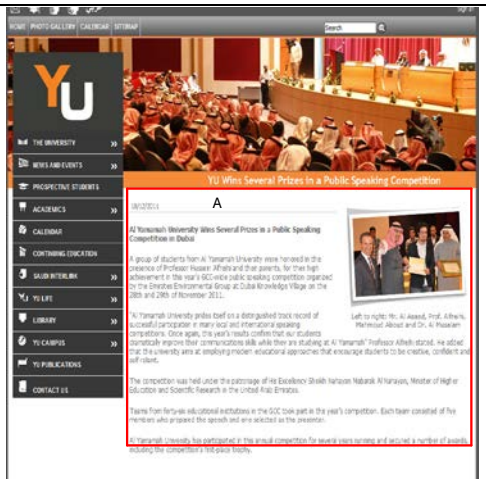
Figure 4.8: Exemplifying Image Text Analysis through Concurrence, Complementarity and Enhancement (described in Section 4.6).

(a)

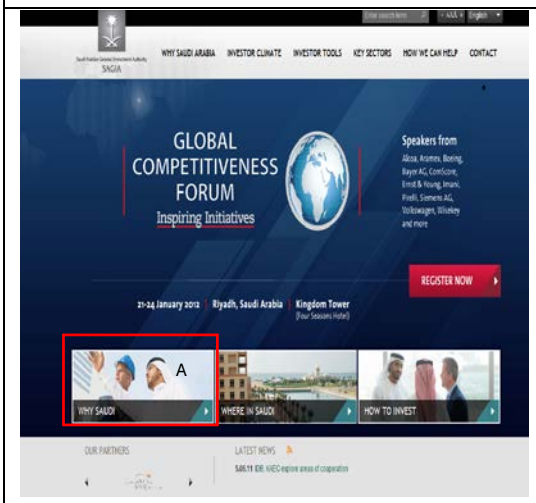


(b)

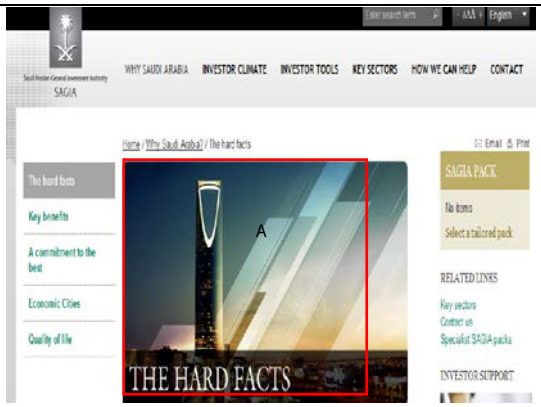
(c)



(d)



(e)



4.7 Methods 5: Navigation Systems described using System Networks

The understanding of a website presented here is largely concerned with organising information or content of various kinds. How the content of a website (its media, pages, and so on) is organised is dependent on the system of classification that has been employed in its construction. Web-based technologies can potentially support multiple organisation systems for the same content. This is performed through different types of navigation.

4.7.1 *Website Structure (Physical versus Logical Views)*

Ultimately, websites consist of files that reside on a server. A web browser identifies a web page from other files residing in a directory by means of its file extensions (for example .html, .htm and .shtm). Once a web page is loaded, the browser attempts to load all of the required media. The required media in the form of pictures, movies, sounds and so on, are loaded based on references within the web page (using *Universal Resource Locators* or *URLs*). These media may exist in the same machine and file directory as the web page or they may exist on a completely different machine. Servers attach a so-called Multipurpose Internet Mail Extension or *MIME type* to each document to tell the browser what kind of media it is. Once a document is requested, by clicking on a link for example, a browser will need to then determine how to handle the MIME type. Generally, this will be by directly displaying its contents in a window, by using a plug-in or by launching a helper application (Niederst, 1999:61). If all the media is present and actually at the URL specified in the webpage, and if the browser has the capability to handle the particular media and also if the user has permissions to display the media, then the page is displayed with all of its media intact and in the specified locations on the page.

The view of a website that emphasises the location of web pages and their associated media, either in terms of a directory in a file system or as information located in a database, is

referred to as a *physical view* of the site structure. The physical view of a website structure is important in so far as the missing media or pages will disrupt the experience for the web user. But outside of the worst case of a page not displaying all of associated media or failing to load at all, users will not care which machine or file system the information is coming from. In fact, there are security reasons for not allowing users to see the actual arrangement of files in directories, and modern web servers allow for the creation of virtual paths to actual pages and media. From a web systems management perspective, the creation of virtual paths allows for files to be physically moved around a file system without having to change their names which would in all likelihood create errors on web pages. Modern web technologies allow the actual locations of files to be hidden or virtual paths to be created that enable a more purposeful arrangement of web pages and their resources. What is much more important to web users rather than web developers and managers is how documents are linked together. This view of a website is referred to as the *logical view* of the site structure (Powell, 2000:95-96).

4.7.2 *Navigation and Logical Website Structure*

The logical view of a website, and for the purpose of this thesis, equates to the users perspective of a website and consists of relationships in the form of links within and between pages. Users navigate through the website by sifting through its contents (Scharl, 2000:16), effectively making decisions about what is relevant and what is not based on their own observations, interests and needs. While the logical view of a website provides the scope, size and extent of the website in terms of its content, navigation is the process or activity by which users choose what is to be considered or accessed. As highlighted in section 4.4.4, navigation by users is a semiotic activity and this is the key to being able to identify and apply an

appropriate method for describing the logical structure of a website.

The larger the website, the more choice is available to the user and the more critical it is to effectively label or refer to the content and enable users to more effectively select it. Users can get progressively lost as a site grows in size or unplanned changes are made, as Nielsen (2000a:198) states "... without any planned structure [websites] end up in total chaos as a collection of random directories without any systematic relations among different parts of the site". As the size and complexity of a website increases so does its data management issues (see Sano 1996 as an early example of the kinds of practices that are required in this regard). Large websites can acquire disparate material that "ends up with a complex structure that needs a lot of navigation support" (Nielsen 2000a:207).

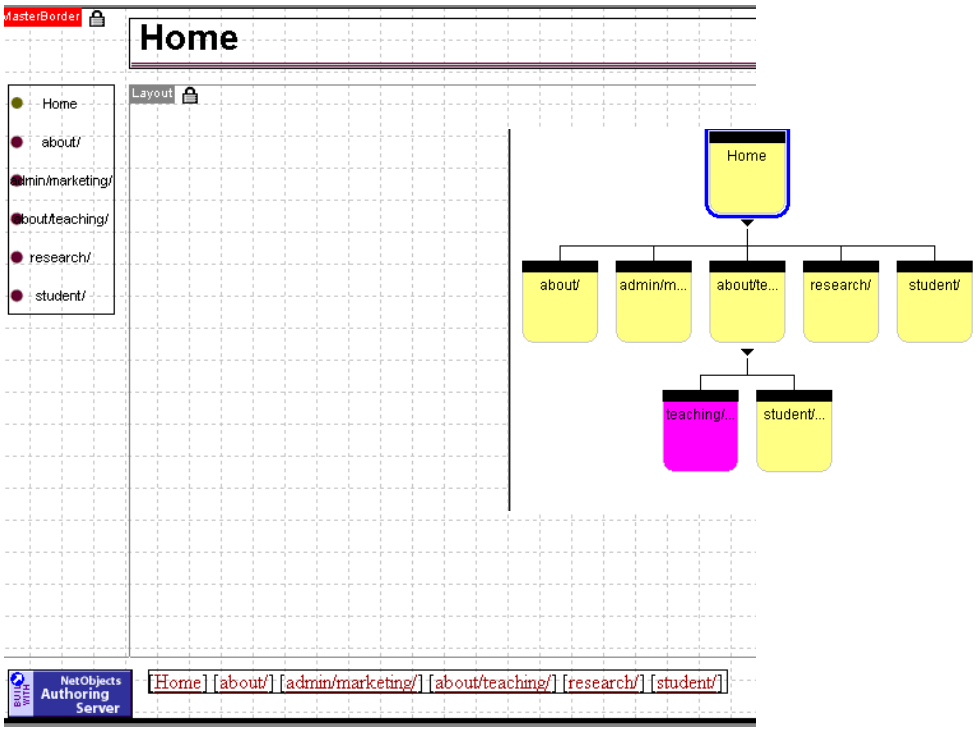
When developers describe the physical or logical view of a website, they consider navigation in terms of levels. In fact many of the tools used to develop websites have this concept of levels inbuilt (see for example an arbitrary website developed in NetObjects Team Fusion in Figure 4.9). With reference to the insert in Figure 4.9, users start viewing a website by looking at its home page (index.htm) which is referred to as existing at a level '0'. From this page, a user gradually progresses through a website. All subsequent pages are at Level 1 and 2. The pages on Level 2 are under the third page in this structure. Sites typically exhibit a hierarchical structure that gets more detailed at subsequent levels (Nielsen 2000a:198). Most websites are organised hierarchically because users seem to be able to navigate them more easily than alternatives that have been tried. For example, Nielsen (2000:198) discusses the use of tabular site structure where all pages link to all other pages and observes that this kind of site structure is very difficult to navigate.

4.7.3 *Types of Navigation System (Global and Local)*

This thesis has discussed how the logical view of website structure is inevitably intertwined with navigation of the website in that links provide the potential for users to access particular pieces of information or in fact other pages. A lack of links also has the opposite effect of restricting the degree of movement around a website. In this thesis, the understanding of a website is largely concerned with organising information or content of various kinds. How the content of a website (its media, pages, and so on) is organised is dependent on the navigation systems that have been employed in its construction. Web-based technologies can potentially support multiple organisational schemes for the same content, performed through different types of navigation.

There are two distinct navigation systems for websites. Global navigation systems are typically available on each page of a website (see for example the options running down the left hand side of the hypothetical webpage in Figure 4.9, pg. 47). In this case, the global navigation options are also provided in text form at the bottom of the screen. Web development environments like NetObjects Team Fusion shown in Figure 4.9, often generate both these global navigation options directly from the site structure (see insert). The site structure specifies the links between pages. Local navigation options on the other hand, are likely to be idiosyncratic and unstandardised, only available from within a small set of pages as part of the content or a small set of pages deep within the lower levels of site structure (see for example, the teaching and student pages in Figure 4.9, below).

Figure 4.9: The logical site structure of an arbitrary website (insert), developed by following links between pages. Consider the Home page at Level 0; all subsequent pages are at Level 1 and 2. The pages on Level 2 are under the third row of pages in this hierarchy. The Site Structure is reflected in the Global Navigation options on the left-hand side of the Home page.



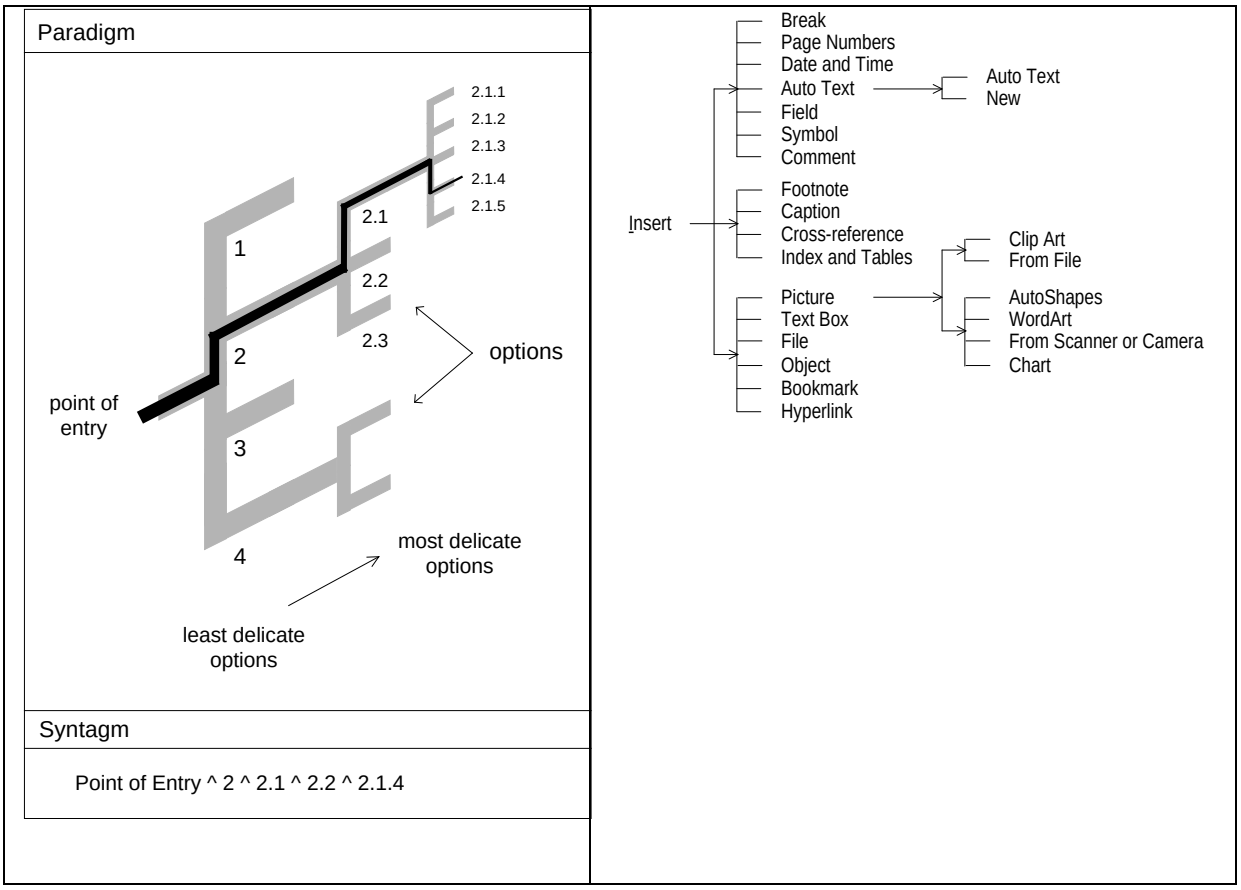
4.7.4 *System Networks*

So far, the different types of navigation possible within websites have been described. However, the way this has been done, is in reference to traditional web development practices. It is possible to look at navigation systems semantically as well. Navigation systems are systems of content classification and can be modelled using a diagramming notation extensively used in SFL called a *system networks*. These are used to represent the *paradigms* or all available options in a semiotic system. Navigation systems used in SFL to

show amongst other things, the options within a language system. A hypothetical system network is provided in Figure 4.10 (left). Starting at the left-hand side of the diagram at the so-called *point of entry* for this network there are four possible options (1...4). The square brackets signify that these options are in logical OR relations. In other words, the user must select between one and only one option. Say for example, they pick option 2. On this path in this network a further three options are available, again the user may select one of them; say option 2.1. This option provides a sub-network of five options, 2.1.1 through to 2.1.5, and the user must select one of these. These options represent terminal options meaning that there can be no other further sub-options from which to select, and so selecting anyone of these completes the set of choices made by the user. These sets of choices forms a path through the system network called a *syntagm* (see Figure 4.10 (left bottom)).

This thesis suggests that system networks represent the paradigm of available content for users. The global navigation on a website is effectively a *superordinal taxonomy*; that is the options and sub-options form *part-whole relationships* with each other. With reference to the top of Figure 4.10 (right), a part of Microsoft Word's menu tree, looks similar to hierarchies that constitute not only the pathways for users to navigate but also organise content into sets consisting of *part-whole relations*. By this we mean that web pages on level 1 like 'about' and 'administration' are parts of the whole 'home' for this arbitrary website (see Figure 4.9 pg. 47 – insert). 'Home' is a very general category of information that should describe briefly most of what should be expected in a website and is by definition a less specific page than 'research'. Navigation systems therefore, are systems of classification of web content because they organise content using part-whole relations and divide it into increasingly more specific content.

Figure 4.10: Diagrammatic representation of an arbitrary System Network (left) and its application in describing the options provided in a menu option in an older version of Microsoft WORD (right)



4.7.5 *Comparing Global Navigation Systems using System Networks*

So far, this thesis has considered the static representation of global navigation systems using system networks. In this section, it describes how to compare global navigation systems to see if they are similar or different to each other. Again, it draws on semiotics to identify a test for similarity called the commutation test that is applied to the system network representation of global navigation systems. To the best of this candidate's knowledge this has not been attempted previously although it is possible to do so because the commutation test can be

applied both syntagmatically and paradigmatically (recall from our previous discussions that system networks are paradigms). Based on the results of the commutation test, it is possible to explore how similar relatable sets of system networks are to each other. The aim is to be able to create prototypical system networks that can encompass and account for the variation in the semantics of relatable global navigation systems.

To describe both the substitution text and the comparison between subsystems, two hypothetical subsystems A and B are used in Figure 4.11 (a). These could be separate networks representing for example, systems networks of two different eBusiness websites. Alternatively these might be subsystems within the same system network. Subsystem A consists of three levels starting on the left hand side with the least delicate option 'A' at Level 0, followed then by level 1 consisting of two options A1 and A2, these each having more delicate options respectively A1.1 and A1.2 and A2.1 and A2.2. Subsystem B shows three sub-options at level 1 only one of these options B1 has any further options which at level 2 are B1.1, B1.2 and B1.3. B1.2 has its own further sub-options B1.2.1 and B1.2.2 at level 3. In reality, these idealised option names would likely be labels or media in the form of icons or buttons. Although the use of these option names have been devised to reveal the structural levels in the network, it should be noted that no order is implied by the options and none is required for comparing system networks.

Each navigation option within a global navigation system can be considered as a sign. As previously described in Chapter 3, SFL uses the linguistic sign of Saussure (1915; 1983) consisting of a form (*signifier*) and an associated meaning (*signified*) shown below.

$\frac{S}{s}$	Signifer	form (navigation option)
	Signified	meaning

It is reasonable to a venerable semiotic test called the *commutation test* to probe the relations between any arbitrary units (signs or options in subsystems) to determine if they are sufficiently distinct from each other.

Commutation Test

To determine if these two arbitrary units (global navigation options) are sufficiently distinct from each other, an attempt is made to substitute the signifiers and see if there is a corresponding shift in the signified (the associated meanings). The two arbitrary units or options are shown connected by a red line in Figure 4.11 (a). We can try substituting the signifier in this case a label for the option ‘B1’ with that of ‘A1.2’. To assist in resolving whether ‘B1’ is actually a synonym of ‘A1.2’ reference is made to the meanings associated its immediate sub-options B1.1, B1.2 and B1.3; these are highlighted in pink in Figure 4.11 (a). If there is a corresponding shift (=) in the signified or meaning of ‘A1.2’ with ‘B1’ then the commutation test is said to pass in other words the subsystems are different to each other. If there is not a corresponding shift in the signifier or meaning (≠) then the commutation test is said to have failed, because the meaning of the options are considered to be effectively the same as each other. The two possibilities are summarised below:

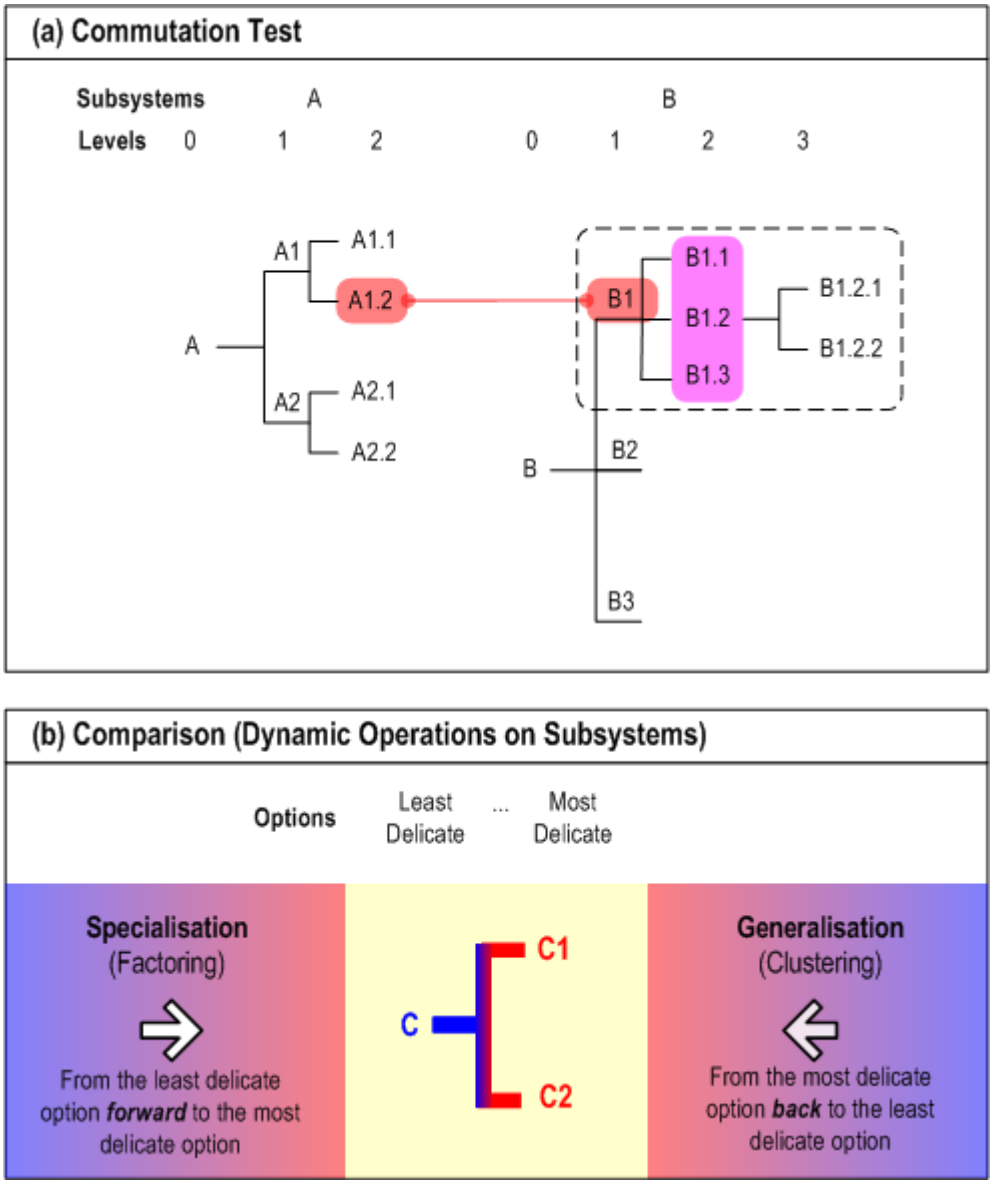
$A1.2^S \leftarrow B1^S = A1.2_S \leftarrow B1_S$	Pass	Subsystems are different
$A1.2^S \leftarrow B1^S \neq A1.2_S \leftarrow B1_S$	Fail	Subsystems can be considered as the same

The commutation test is in essence a test of differences. However, it allows us to identify similarities between comparable subsystems or system networks; in this case these are places where one part of the global navigation system could be replaced with another. Once these similarities and differences have been identified, dynamic (as distinct from static) operations can be performed on these networks in order to see if an overarching system network can be created that in the general case describe the variation in the structure and semantics of relatable systems networks. These dynamic operations are described below.

Dynamic Operations on System Networks

There is an expectation that similar business sectors will reflect this similarity in the structure of the global navigation on their websites. To create overarching system networks that account for the structural and semantic variation within a relatable set of networks, we first need to be able to identify those similar subsystems by applying the commutation test to them and having it fail as previously described. To create an overarching system network, this thesis proposes two dynamic operations that can be performed on them. The term 'dynamic' is meant to contrast with the 'static' application of system networks for representing global navigation systems. These dynamic operations are called *specialisation* and *generalisation* and use the fact that system networks are superordinal taxonomies. Specialisation involves 'factoring' or splitting any one option into two or more specific or more delicate options C1 and C2 (refer to Figure 4.11 (b) left hand side). Generalisation on the other hand, involves the inverse dynamic operation of seeing a more general option that could be used to 'cluster' or subsume two or more delicate options into one less delicate option; refer to Figure 4.11 (b) right hand side.

Figure 4.11: Comparing System Networks using the (a) substitution test to identify similar or different global navigation subsystems, (b) and them applying specialisation or generalisation to factor or cluster navigation options, see text for further explanation.



4.8 Summary

In this chapter, a framework for exploring the semantics of web pages has been discussed. The methods that were included in this version of the framework are based on systemic semiotic theory and are directed at exploring the non-textual semantics of web systems including page layout (compositional attributes and axes), image analysis (using mood, subjectivity/objectivity, social distance, and modality), image text analysis (using concurrence, complementarily and enhancement) and navigation methods applied to global as distinct from local navigation (using system networks). To anchor these systemic semiotic methods, conventional component and wireframes discussions are utilised to support compositional attributes and compositional axes and conventional but nonetheless, useful content organisations schemes to describe image analysis and image-text analysis undertaken in this study. System Networks represent a semantic approach to describing website navigation structure. The framework is now applied to the home pages of two set of websites. These sets represent distinct cultures (Australia and Saudi Arabia), discussed in Appendix A1 and A3, respectively. In Chapter 5, the application of Methods 1 to 4 of the Framework is compared to see if cultural differences can be identified in the content of the web pages themselves. In Chapter 5, following Figure 4.2, a comparison of the navigation structures is also provided.

CHAPTER FIVE

Comparison and Evaluation

5.1 Introduction

In this chapter, Australian and Saudi Arabian homepages are compared using Methods 1 through to 4 of the Systemic Semiotic Web Systems Methodological Framework. The exceptions are to those methods which were incorporated into the framework from traditional information systems practices (Page Design, Wireframes) as they were used to scaffold the descriptions from Australian and Saudi Arabian websites only in Appendix A1 and A3 respectively. Where there are any useful implications of the analysis, these will be discussed near the methods that were used to identify them. An example of this is a discussion of gender and adult and child representation cultural differences that are inevitably to be considered based on the tenor relations analysis conducted on the web pages.

Firstly, the analysis of navigation structures that was deferred until now because of the considerable length of the homepage analysis is considered. The navigation methods are based on the recognition that navigation is actually a kind of content classification and as such system networks can be used to represent them. The method has been extended to allow for a comparison of system network structures, refer to section 4.7 for details.

5.2 Methods 1: Compositional Attributes

5.2.1 *Salience and Balancing Centre*

In general, the most salient part of the Australian home page is where the banner image is located and in almost all cases that is at the top of the webpage itself. The only exception to this rule in the Australian sites are two of the major banks (NAB and ANZ) and two major telecommunications companies (TPG and Telstar) that locate the banner in the topmost left hand corner and locate a banner image lower down the page. These banks are so dominant that they need not see the need to locate their logo with the banner (see Table 5.1). What this means is that despite obvious differences each Australian homepage is conforming to the same underlying compositional semantics in terms of salience and balancing centre largely independent of the industry sector. If the organisation is large enough it might break this rule of compositional semantics (refer to Table 5.1, (Top)). The Saudi homepages are much more consistent in this regard of having a banner image located at the top of the page in almost all cases.

5.2.2 *Vectors and Reading Paths*

There appears to be a greater degree of variety when it comes to considering the kinds of vectors and reading paths represented on home pages. There is evidence in equal measure examples of both regular and circular Australian, but it is interesting that all the telecommunication sites exhibit a circular reading path. For services rather than products and especially sites that are providing rather abstract services (particularly the case with Australian Telecommunications) a circular reading path encourages exploration of a page; refer to Table 5.1). One might expect regular (that is vertical or horizontal) paths when the

reader is being directed to areas based on function, so for example, when searching for particular information or features. Australian Banks mostly use regular reading paths. In contrast to one Tourism site, the Transport homepages do appear to use regular reading paths that might reflect trip searching and comparison (see Appendix A3 Murrays in Figure A3.53 and Travel scene in Figure A3.61). This is contrasted against the reading paths in Saudi homepages which are a real mixture of both regular and circular reading paths. A definitive result must await a larger scale survey of sites than the one attempted here (see subsection 6.4.8), but it might seem that a circular reading path is the consequence of the isomorphic field relations identified earlier in this chapter (see subsection 5.2 and Table 5.2).

Table 5.1: Compositional Semantics Attributes (Australian Web pages) (Appendix A1)

Key: *Reading Paths*: Regular and Circular

Organisation	Figure	Top	Vector | Description		Path
Banking and Insurance					
Commonwealth	A1.1 A	Y	1	Hue of the colour	C
			2	Frame	
			3	Hands	
			4	The colour (yellow) of the rays of the sun	
			5	Colour (yellow) of the flower	
			6	Logo of the “Breast Cancer Institute of Australia”	
			7	Colour of the logo (blue)	
NAB	A1.5	N	1	Dark red colour	R
			2	frame	
			3	Two words “credit cards”	

			4	Colour of the background	
ANZ	A1.10 A	N	1	Hue of the colour	C
			2	The hue of the background	
			3	Frame	
			4	Word “VISA”	
			5	The duplication of the top image	
			6	Same colour of the background	
Bankwest	A1.15 A	Y	1	The varieties of the colours of the top image	R
			2	The face of the flower	
			3	Leaves of the smiling flower	
			4	Frame	
			5	Hair of the woman	
			6	Colour of the frame (orange)	
AAMI	A1.20 A	Y	1	The hue of the colour	R
			2	Frame	
			3	Bottom edges of the letters (AAMI)	
			4	Same colour (red) of the image is used again	
Telecommunications					
Dodo	A1.24 A	Y	1	Hand of the bird	C
			2	Edges of purple paintings	
			3	Image of the bird and the mobile phone	
			4	Colour of the background	
TPG	A1.28	N	1	Repeating of the colour of the top text	C
			2	Frame	
			3	Repeating of the text “Unlimited ADSL2”	
			4	Colour of the background	
Telstra	A1.32 A	N	1	Colours of top image	C
			2	Frame	
			3	Virtual “noses” of the two virtual faces	

			4	Repeated image of the two virtual faces	
			5	Orange edge “More Ways We’re Changing”	
			6	Colour of the background	
Organisation	Figure	Top	Vector | Description		Path
Optus	A1.36 A	Y	1	Colour of the top image	C
			2	Frame	
			3	Legs of the two smiling faces	
			4	Two smiling faces	
			5	Colour of the background	
Food					
Dairy Farmers	A1.40 A	Y	1	Hue of the colour	R
			2	White shiny lines around the logo	
			3	Legs of the two cows	
			4	Colours of the logo	
Parmalat	A1.44 A	Y	1	hue of the colour	R
			2	frame	
			3	Green bottle which is held by the small boy	
			4	Legs of the two children	
			5	Teeth of the woman	
			6	Knees of the “flying girl”	
			7	Small boy	
			8	Colour of the background	
Fleurieu	A1.48 A	Y	1	Variety of the colour	C
			2	Frame	
			3	Repeating of the same products	
			4	Repeating of the grass	
Transport and Tourism					
Murrays	A1.53 A	Y	1	Hue of the colour	R
			2	Frame	
			3	Repeating of the green colour	

			4	Colour of the background	
			5	Two mirrors	
Platinum Australia	A1.57 A	Y	1	Hue of the colour	C
			2	Frame	
			3	Dining table	
			4	Edges of the bridge	
			5	Colour (orange) of the sunset	
Travelscene	A1.61 A	Y	1	hue of the colour	R
			2	frame	
			3	tyres of the plane	
			4	jet fan	
			5	front part of the plane	
			6	colour of the background	
Energy					
AGL	A1.65 A	Y	1	Repeating of the blue colour	C
			2	Frame	
			3	Hand and the suitcase	
			4	Blue Colour	
EnergyAustralia	A1.69 A	Y	1	Hue of the colour	R
			2	Frame	
			3	Edges of the cake	
			4	Edges of the fruit	
			5	Colour (orange) of the cake	

Organisation	Figure	Top	Vector | Description		Path
Others					
Leading Edge Electronics	A1.73 A	Y	1	Hue of the colour	C
			2	Frame	
			3	Colour of the background	
			4	Base of the image (helicopter)	
			5	Colour and the text of "view our latest catalogue"	
			6	Shape of the catalogue	
Holden	A1.78 A	Y	1	Hue of the colour	R
			2	Frame	
			3	Shaded glasses	
			4	Colour of the background	
			5	Tyres of the car	
			6	Front part of the car	
Officeworks	A1.83 A	Y	1	Hue of the colour	R
			2	frame	
			3	Last (opened) drawer of the cabinet	
			4	Colour of the background	

Table 5.2: Compositional Semantics Attributes (Saudi Arabian Web pages) (Appendix A3)

Key: *Reading Paths*: Regular and Circular

Organisation	Figure	Top		Vector | Description	Path
Banking and Insurance					
Alrajhi	A3.1 A	Y	1	Hue of the colour	C
			2	Frame	
			3	Four men	
			4	Colour of the background	
Samba	A3.6 A	Y	1	hue of the colour	R
			2	Frame	
			3	Coffee Table	
			4	Same colour of the background	
Alfaransi	A3.12 A	Y	1	Different colours of the horses	C
			2	Frame	
			3	Black horse	
			4	Legs of the white horse	
			5	Red line in (Tradition)	
			6	Colour of the background	
Alahli	A3.16 A	Y	1	Hue of the colour	R
			2	Frame	
			3	Colour of the sand	
			4	Colour of the background	
			5	Hands of the small girl	
Tawuniya	A3.20 A	Y	1	Hue of the colour	C
			2	Frame	
			3	The edge of the “OPEN”	
			4	Colour of the background	

Telecommunications					
STC	A3.26 A	Y	1	Hue of the colour	C
			2	Frame	
			3	Rainbow plus the building	
			4	Colour of the background	
Atheer	A3.32 A	Y	1	Hue of the colour	R
			2	The number on the top picture	
			3	Red line that points to the clock	
			4	Frame	
			5	Shoes of the virtual man	
Nesma	A3.36 A	Y	1	Hue of the colour	R
			2	Frame	
			3	Hand of the woman	
			4	Colour of the background	
AwalNet	A3.40 A	Y	1	Hue of the colour	C
			2	Frame	
			3	The (number 1) sign	
			4	Colour of the background	
Naseej	A3.45	N	1	Hue of the colour	R
			2	Frame	
			3	Colour of the background	

Organisation	Figure	Top	Vector | Description		Path
Food					
Almarai	A3.49 A	Y	1	Repeating of the blue colour	C
			2	Frame	
			3	Picture of (cut head)	
			4	Colour (blue)	
Nadec	A3.53 A	Y	1	Hue of the colour	C
			2	Frame	
			3	Hands	
			4	Colour of the background	
Sadafco	A3.57 A	Y	1	Hue of the colour	C
			2	Frame	
			3	Picture of the product	
			4	Colour of the background	
Transport and Tourism					
Saptco	A3.61 A	Y	1	Hue of the colour	C
			2	Frame	
			3	Picture of the street	
			4	Picture of the tyres	
			5	Repeated image of the bus	
Fursan	A3.65 A	Y	1	Hue of the colour	R
			2	Frame	
			3	Edges of the mountains	
			4	Colour of the background	
			5	End of the basis of the bridge	
Energy					
Gasco	A3.69 A	Y	1	Hue of the colour	C
			2	Frame	
			3	Large white square pieces	
			4	Colour of the background	

SECO	A3.73 A	Y	1	Hue of the colour	C
			2	Frame	
			3	Arm of the man	
			4	Colour(blue) of the clothes	
			5	Repeated images of the screens shots	
			6	Colours (Black) of the chairs	
			7	Blue and white colours	
			8	Orange colour	
Others					
AEC	A3.77 A	Y	1	Hue of the colour	C
			2	Frame	
			3	Three airplane	
			4	Blue Colour	
Sabic	A3.82 A	Y	1	Hue of the colour	R
			2	Frame	
			3	Mobile phone	
			4	Colour of the background	
Jarir	A3.87 A	Y	1	Hue of the colour	R
			2	Frame	
			3	Edge of the cover of the magazine	
			4	Colour of the background	

5.3 Methods 1: Situational Context- Field and Tenor Relations

The first direct evidence for cultural differences between Australian and Saudi Arabian websites relates to field and tenor relations.

5.3.1 Australian Field and Tenor Relations

Australian Field relations are provided in Table 5.3. Banking Telecommunications and Energy are dominated by isomorphic (similar or singular form) field relations. Only occasionally are there an example of anisomorphic social actions and activities. While most Australian field anisomorphisms relate to differences in meaning between textual media and image media (on several occasions both media in question are actually images), the majority of times both image and text appear to be consistently about the same thing, for example 'business activity' or 'family'. Differences do exist between sectors but these are explainable as well. Food and Tourism do have more anisomorphic field relations than isomorphic ones. This is not surprising given the fact that one would expect both industries to be reaching for a variety of different customers. The "Others" category not surprisingly shows a roughly equal split between isomorphic and anisomorphic field relations revealing the composite nature of business organisations in this category. There is some scant evidence for social activity as an alternate field in the Telstra telecommunications, in the food sector in the Parmalat site, and Platinum Australia (tourism) site.

Within and cross sector differences for the field relations in Australian websites are exactly mirrored in the tenor relations, see Table 5.4. On almost every occasion where there is a consistent single, isomorphic field there is a single participant type being referred to, so National Australia Bank "Customers" (single tenor) are consistently represented as involved

Table 5.3: Australian Web Page Field Relations

Key: *Media*: Textual, Image (inferred); *Field Complexity*: Isomorphic/Anisomorphic (Appendix A1)

#	Category	Section	Figure	Lexical Items	I/A
Banking and Insurance					
1	Commonwealth Bank	A1.2.1	A1.4 (A)	T: breast cancer; I: Family Activities	A
		A1.2.1	A1.1	T: Business Activity	I
2	National Australia Bank	A1.2.2	A1.5	T: Business Activity	I
3	ANZ	A1.2.3	A1.10	T: Business Activity	I
		A1.2.3	A1.14 (D)	T: Money Tracking, I:Banking Solutions	I
		A1.2.3	A1.14 (C)	T: Business Specialist, I: Small Business Solutions	I
4	Bankwest	A1.2.4	A1.19	T: Transaction Fee, I: Social Customers Solutions	I
5	AAMI	A1.2.5	A1.23 (E)	T: Renters, I:House Insurance Activity	I
Telecommunications					
6	dodo	A1.3.1	A1.27(A)	T: Galaxy, I:Using Samsung Pone	I
7	TPG	A1.3.2	A1.28	T: Using Internet activity-ADSL.	I
		A1.3.2	A1.28	T: Business Activity	I
8	Telstra	A1.3.3	A1.32	T: Business Activity	I
		A1.3.3	A1.35 (B)	T: Business Activity, I: Social Activity.	A
9	Optus	A1.3.4	A1.36	T: Business Activity	I
		A1.3.4	A1.39 (A)	T: Face of Prepaid, I: using prepaid mobile phone.	I
Food					
10	Dairy Farms	A1.4.1	A1.43 (C)	T: For Kids, I:Family consumption	I
		A1.4.1	A1.43 (B, D... F)	T: Products, I:Business Activity	I
11	Parmalat	A1.4.2	A1.47 (A)	I: Business Activity, I: Social Activity	A
		A1.4.2	A1.47 (C)	T: Children Food, I:Family consumption	I
		A1.4.2	A1.47 (E)	T: Students use; I: Cow Milking	A
12	Fleurieu	A1.4.3	A1.52 (E)	T: Iced Coffee, I:Ad for Iced coffee	I

Transport and Tourism					
13	Murrays	A1.5.1	A1.56 (B)	T: Business use; I: Environment Act	A
14	Platinum Australia	A1.5.2	A1.60 (C)	I: Business Activity, I: Social Activity	A
		A1.5.2	A1.60 (E)	I: Business Activity, I: Social Activity	A
15	Travelscene	A1.5.3	A1.64 (A)	T: Sale, I:Business for Buying tickets	I
		A1.5.3	A1.64 (B)	T: Financial Activity, I: Business Activity	A
Energy					
16	AGL	A1.6.1	A1.65	T:Business Activity	I
		A1.6.1	A1.68	T and I:Business Activity	I
17	Energy Australia	A1.6.2	A1.69	T:Business Activity	I
		A1.6.2	A1.72	T: Cathy's Kitchen, I:Food(Cooking)	I
Others					
18	Leading Edge	A1.7.1	A1.77 (B)	T: Catalogue, I:Business Activity(sales)	I
		A1.7.1	A1.77 (C)	T: Security Activity, I:Busniess Activity	A
19	Holden	A1.7.2	A1.82 (A to I)	T: Products, I:Products and their Prices	I
20	Officeworks	A1.7.3	A1.87 (A to E)	T: Products, I:Business Activity	I
		A1.7.3	A1.87 (F)	T: Mailing List, I:Business and Ad	A

Table 5.4: Australian Web Page Tenor Relations

Key *Media:* Textual, Image (inferred); *Tenor Dimensions*: Contact (Occasional/Frequent); Affective Involvement (Low /High) and Power Relationship (Unequal/Equal); *Tenor Complexity*: Single/Multiple (Appendix A1)

#	Company	Section	Figure	Media (Tenor Dimensions)	S/M
Banking and Insurance					
1	Commonwealth Bank	A1.2.1	A1.4 (A)	T: Australia Breast Cancer Institute (O, H, E) I: Mother and Daughter (O, H, E)	M
		A1.2.1	A1.1	T: Customers (Personal, Business and Corporate) (O, L, U)	S
2	National Australia Bank	A1.2.2	A1.5	T:Customers (Personal and Business) (O, L, U)	S
3	ANZ	A1.2.3	A1.10	T:Customers (Personal and Business) (O, L, U)	S
		A1.2.3	A1.14 (D)	T: Simple Banking (F, H, E), I: 'Couple' Customers (F, H, E)	S
		A1.2.3	A1.14 (C)	T: Small Business(O, L, U) , I: Small Business Customers (O, L, U)	S
4	Bankwest	A1.2.4	A1.19	T:customers (F, H, E); I: customers (Husband and wife) (F, H, E)	S
5	AAMI	A1.2.5	A1.23 (E)	T: Renters (O, L, U); I: Tenants (O, L, U)	S
Telecommunications					
6	dodo	A1.3.1	A1.27(A)	T : Galaxy Users (F, H, U); I: Customers using Mobile social media (F, H, U)	S
7	TPG	A1.3.2	A1.28	T: Customers using home rental plans (O, L, U)	S
		A1.3.2	A1.28	T: Home and Business customers (O, L, U)	S
8	Telstra	A1.3.3	A1.32	T: Personal, Business, Enterprise and Government customers (O, L, U)	S
		A1.3.3	A1.35 (B)	T: Customers (O, L, U) , I: Women (O, H, E)	M
9	Optus	A1.3.4	A1.36	T: Personal and Business (O, L, U)	S
		A1.3.4	A1.39 (A)	T: Dollar Days Users (F, H, U); I: Prepaid mobile users (F, H, U)	S
Food					
10	Dairy Farms	A1.4.1	A1.43 (C)	T: For Kids (F, H, E); I:Kids Customers (F, H, E)	S
		A1.4.1	A1.43 (B, D... F)	T: Cream Customers (F, H, U);I:Customers (F, H, U)	S
11	Parmalat	A1.4.2	A1.47 (A)	I: Customers and families (F, H, E)	M
		A1.4.2	A1.47 (C)	T: Food for Children (F, H, E); I:Children customers (F, H, E)	S

		A1.4.2	A1.47 (E)	T:Students customers (O, H, U); I: Cow (F, L, E)	M
12	Fleurieu	A1.4.3	A1.52 (E)	T: Fleurieu Iced Coffee (O, L, U); I:Iced Coffee Customers (O, L, U)	S
Transport and Tourism					
13	Murrays	A1.5.1	A1.56 (B)	T: Customers (F, H, E); I: Environment people (O, H, U)	M
14	Platinum Australia	A1.5.2	A1.60 (C)	I: Customers and family's Friends (F, H, E)	M
		A1.5.2	A1.60 (E)	I: Customers and Couples (F, H, E)	M
15	Travelscene	A1.5.3	A1.64 (A)	T:Business Class (O, H, U); I: Business class customers (O, H, U)	S
		A1.5.3	A1.64 (B)	T: Finance people (O, H, U); I: Customers (O, L, U)	M

Energy					
16	AGL	A1.6.1	A1.65	T: Home and Business Customers (O, L, U)	S
		A1.6.1	A1.68	T: More Energy Efficient (F, H, E); I: Customers (O, L, U)	S
17	Energy Australia	A1.6.2	A1.69	T: Residential and Business (O, L, U)	S
		A1.6.2	A1.72	T: Cathay's Kitchen (F, H, E), I: Cookers Customers (O, L, U)	S
Others					
18	Leading Edge Electronics	A1.7.1	A1.77 (B)	T: Latest Catalogue (F, H, E), I: Customers (O, L, E)	S
		A1.7.1	A1.77 (C)	T: Policemen (F, H, E), I: Customers (O, L, E)	M
19	Holden	A1.7.2	A1.82 (A.to.I)	T: Holden Products (F, H, E), I: Customers (O, L, E)	S
20	Officeworks	A1.7.3	A1.87 (A to E)	T: Products (F, H, E), I: Customers (O, L, E)	S
		A1.7.3	A1.87 (F)	T: Join List (F, H, E), I: Customers and Other people (O, L, U)	M

in "Business Activity" (isomorphic field). A contrasting example is the anisomorphic field relations in Telstra, see Figure A1.35 (B), revealed in the text as being involved in "business activity" versus a related image that shows social activity, which is reflected in the existence of multiple tenor where the text concerns "customers" while the image concerns women.

5.3.2 *Saudi Arabian Field and Tenor Relations*

In contrast to the Australian field result, Saudi Arabian websites routinely utilise multiple fields exhibiting anisomorphic field complexity (see Table 5.5). This is a striking result because in terms of field relations Australian and Saudi Arabian websites are the opposite to each other in this regard. Interestingly, the choice of an alternative field is not arbitrary either. There is a strong cultural preference for specific alternative fields. In the Saudi Arabian web sites the preferred alternate field either concerns religious activity. For example, both Alrajhi and Alahli banks, the telecommunications companies STC and Atheer as well as the Jarir Bookstore (Others category) all refer to religious activities, while less frequently occurring alternative fields include social activities, environmental activity and national activity.

Table 5.5: Saudi Arabian Web Page Field Relations

Key: *Media*: Textual, Image (inferred); *Field Complexity*: Isomorphic/Anisomorphic (Appendix A3)

#	Category	Section	Figure	Lexical Items	I/A
Banking and Insurance					
1	Alrajhi Bank	A3.2.1	A3.5 (A)	T: Welcoming Activity, I: Business Activity	A
		A3.2.1	A3.15	T and I: Religious Activity and Business Activity	A
2	Samba	A3.2.2	A3.6	T: Business Activity	I
		A3.2.2	A3.11 (A)	T and I: Business Activity for using bank services.	I
3	Alfaransi Bank	A3.2.3	A3.12	(indices, oil metals…), T: Business Activity and financial Activity	A
		A3.2.3	A3.15 (B)	T and I: Business Activity for using bank Credit Cards.	I
4	Alahli Bank	A3.2.4	A3.13	T and I:Religious Activity and Business Activity	A
		A3.2.4	A3.19 (C)	T:Business Activity, I: National Activity	A

5	Tawuniya	A3.2.5	A3.25 (D)	T and I: Business Activity	I
Telecommunications					
6	STC	A3.3.1	A3.16	T and I: Religious Activity and Business Activity	A
		A3.3.1	A3.31 (D)	T and I:Business Activity for i phones	I
		A3.3.1	A3.31 (A)	T: Business Activity, I: Social Activity	A
7	Atheer	A3.3.2	A3.17	T and I: Religious Activity and Business Activity	A
		A3.3.2	A3.35 (D)	T and I: Business Activity for after sales service	I
8	Nesma	A3.3.3	A3.39	T: Business Activity, I: Social Activity	A
9	AwalNet	A3.3.4	A3.44 (B, C)	T and I:Business Activity	I
10	Naseej	A3.3.5	A3.48 (A)	T and I: Business Activity	I
Food					
11	Almarai	A3.4.1	A3.52 (A)	I: Social Activity and Business Activity	A
		A3.4.1	A3.52 (B)	T: Social Activity, I: Business Activity	A
12	Nadec	A3.4.2	A3.56 (A)	I: Environmental Activity and Business Activity	A
		A3.4.2	A3.56 (C)	T:Financial Activity, I: Business Activity	A
13	Sadafco	A3.4.3	A3.60 (B, C, D)	T and I: Business Activity for different products	I
Transport and Tourism					
14	Saptco	A35.1	A3.64 (A)	I: Tourism Activity and Business Activity	A
		A3.5.1	A3.64 (D)	T and I: Business Activity	I
		A3.5.1	A3.64 (C)	T and I: Tourism Activity and Business Activity	A
15	Fursan Travel	A3.5.2	A3.68 (B)	T and I: Tourism Activity and Business Activity	A
Energy					
16	Gasco	A3.6.1	A3.72 (A)	T: Environmental Activity, I: Business Activity	A
		A3.6.1	A3.72 (B)	T and I: Business Activity for promoting products	I
17	Seco	A3.6.2	A3.76 (B)	T: Financial Activity, I: Business Activity	A
Others					
18	AEC	A3.7.1	A3.81 (A)	T: Business Activity, I: Technical Activity	A
		A3.7.1	A3.81 (B)	T and I: Business Activity	I
19	Sabic	A3.7.2	A3.86 (D)	T: Financial Activity, I: Business Activity	A
		A3.7.2	A3.86 (C)	T and I: Business Activity	I

20	Jarir	A3.7.3	A3.90 (A)	T: Business Activity, I: Religious Activity	A

Table 5.6: Saudi Arabian Web Page Tenor Relations

Key *Media:* Textual, Image (inferred); *Tenor Dimensions*: Contact (Occasional/Frequent); Affective Involvement (Low /High) and Power Relationship (Unequal/Equal); *Tenor Complexity*: Single/Multiple (Appendix A3)

#	Company	Section	Figure	Media (Tenor Dimensions)	S/M
Banking and Insurance					
1	Alrajhi Bank	A3.2.1	A3.5 (A)	T: Other people (O, L, U) I: Customers (F, L, E)	M
		A3.2.1	A3.15	T: Customers and Muslims (F, H, U)	M
2	Samba	A3.2.2	A3.6	T: Individuals and Business Customers (O, L, U)	S
		A3.2.2	A3.11 (A)	T and I: Customers (O, L, E)	S
3	Alfaransi Bank	A3.2.3	A3.12	T: Customers and other people (O, L, U)	M
		A3.2.3	A3.15 (B)	T and I: Customers (F, L, E)	S
4	Alahli Bank	A3.2.4	A3.13	T and I: Customers and Muslims (F, H, U)	M
		A3.2.4	A3.19 (C)	T:Customers (F, L, E), I: Citizens (F, H, E)	M
5	Tawuniya	A3.2.5	A3.25 (D)	T and I: Customers (F, L, E)	S
Telecommunications					
6	STC	A3.3.1	A3.16	T: Customers (F, L, U), I: Muslims (F, H, U)	M
		A3.3.1	A3.31 (D)	T and I: Smart Phones (iPhone) Customers (F, H, E)	S
		A3.3.1	6.31 (A)	T: Customers (F, L, U), I: Early married people who are looking for permanent houses (F, L, E)	M
7	Atheer	A3.3.2	A3.17	T and I: Customers and Muslims (F, H, U)	M
		A3.3.2	A3.35 (D)	T and I: Customers (F, L, U)	S
8	Nesma	A3.3.3	A3.39	T: Customers(F, H, U) , I: Families (F, H, E)	M
9	AwalNet	A3.3.4	A3.44 (B, C)	T and I: Corporate, Small, Medium customers (F, L, U)	S
10	Naseej	A3.3.5	A3.48 (A)	T and I: Clients Customers (F, H, U)	S
	Food				
11	Almarai	A3.4.1	A3.52 (A)	I: Saudi Staff and non-Saudi Staff (O, H, U)	M
		A3.4.1	A3.52 (B)	T and I: Kids and customers (F, H, U)	M
12	Nadec	A3.4.2	A3.56 (A)	I: Customers and Environment people (O, H, U)	M

		A3.4.2	A3.56 (C)	T: Customers (F, H, U), I:Financial people (F, L, U)	M
13	Sadafco	A3.4.3	A3.60	T and I: milk, paste, ice cream' customers (F, H, U)	S
	Transport and Tourism				
14	Saptco	A3.5.1	A3.64 (A)	I: Customers and Other people (F, H, U)	M
		A3.5.1	A3.64 (D)	T and I: Customers (F, L, U)	S
		A3.5.1	A3.64 (C)	T and I: Customers an Other People (F, H, U)	M
15	Fursan Travel	A3.5.2	A3.68 (B)	T and I: Customers an Other People (F, H, U)	M
Energy					
16	Gasco	A3.6.1	A3.72 (A)	T: Environmental people (O, H, U); I: Customers (F, L, U)	M
		A3.6.1	A3.72 (B)	T and I: Customers (F, L, U)	S
17	Seco	A3.6.2	A3.76 (B)	T:Finance people (F, L, U), I: Customers (F, H, U)	M
Others					
18	AEC	A3.7.1	A3.81 (A)	T: Customers(F, L, U) , I: Employees (F, L, E)	M
		A3.7.1	A3.81 (B)	T and I: Trainees (F, L, E)	S
19	Sabic	A3.7.2	A3.86 (D)	T: Financial People (F, L, U), I: Customers (F, H, U)	M
		A3.7.2	A3.86 (C)	T and I: Corporate customers (F, L, U)	S
20	Jarir	A3.7.3	A3.90 (A)	T: Customers (F, L, U), I: Muslims (F, H, U)	M

Just as the within and cross sector differences for the field relations in Australian websites are exactly mirrored in the tenor relations, so it is for Saudi Arabian websites (see Table 5.6). Where there is an anisomorphic or complex field there is not surprisingly a multiple tenor relation; there are multiple participants represented in the media. For example, the anisomorphic field relations in the Almarai Food site, Figure A3.52 (B) 'social activity' and 'business activity' are similarly reflected in the multiple tenor relations of 'kids' and 'customers'. Similarly, on those relatively few occasions where there are isomorphic field relations there are single tenor relations. For example the Sabic isomorphic field relation of 'Business activity' in Figure A3.86 (C) is reflected in a single tenor relationship of 'corporate customer'. Tenor relationships also encompass an interest in gender association and representation. There are some very specific findings across Australian and Saudi Arabian web sites in this regard, explored in the next subsection.

5.3.3 *Representation of Participants (Gender, Adults and Children) in Image Media*

The tenor results are also revealing if gender and status as an adult or a child is taken into account. If we tabulate the concurrence of males, females and children on the homepages of websites for Australian and Saudi Arabian websites we see some interesting trends. Results of the gender representations within images on Australian home pages reveal the expected spread of representations across male, female and children. There is no privileging of one of the other. There some surprising results however. Children are not often shown (15 out of 24 images did not show children at all), men are also not shown (12/24 images do not have representations of men), but 10/24 images did not have women either. There are very rarely images that have females associated with children only 3/24 examples of this, and only 8/24 times were females represented in images with men. Perhaps more curiously is the number of websites that have no representations of gender (Male/female) or children at all. These

included 9 companies: NAB, Dodo, TPG, Dairy Farmers, Murrays, Energy Australia, Leading Edge Electronics, Holden and Officeworks. This result is particularly interesting in the case of Dodo as its television advertisements represent young women dancing at a disco. In only one case would the Islamic prohibition about unrelated men and women touching would have been violated. In that case (AGL) the image consists of an elderly woman shaking the hand of a tradesperson who has presumably fixed her plumbing.

Perhaps also surprising is the degree of modesty by Australian standards of the representation of women on websites. In the daily newspapers there are often women represented in a fashion which would be offensive to Saudi Arabians. But the representation of women in home pages of Australian web sites is much more like the representation of women in a broadsheet print publication. While the heads and hair is uncovered the women are dressed appropriately and exhibit a professional modern appearance within the context of Australian society.

Results of the gender representations within images on Saudi Arabian home pages also reveal the expected spread of representations across male, female and children; the representations are almost always male. Men are represented in all but 2 of 30 images in Table 5.7. Children are represented in images marginally more frequently 10/30 than women 7/30 versus. When children are represented in images they are equally likely to be represented individually as they might be together. Women on the other hand are typically shown as individuals. When represented women are 4/6 times likely to be represented with men and 5/6 times likely to be represented with children.

Table 5.7: Representation of Participants (Gender, Adults and Children) in Image Media (Appendix A1 and A3)

Australian Web pages

Organisation	Figure	M	F	C
Commonwealth	A1.1A	0	1	1
ANZ	A1.10 C	1	0	0
	A1.10 D	1	1	0
Bankwest	A1.15 A	1	1	0
AAMI	A1.20	0	2	0
Telstra	A1.34	1	0	0
	A1.34 A	0	4	0
	A1.35 C	1	0	0
	A1.35 F	0	0	1
Optus	A1.38	3	3	0
Parmalat	A1.44 A	1	1	2
	A1.44 A	0	1	1
	A1.44 A	0	0	1
	A1.44 A	0	1	0
	A1.44 A	0	0	1
	A1.44 A	1	1	0
	A1.44 A	0	1	0
	A1.44 C	0	0	1
	A1.46 A	0	0	1
Fleurieu	A1.48 C	0	0	1
Platimun	A1.60 C	2	2	0
	A1.60 E	1	1	0
Travelscene	A1.64 D	1	0	0
AGL	A1.65	1	1	0

Saudi Arabian Web pages

Organisation	Figure	M	F	C
Alrajhi Bank	A3.5	7	0	0
	A3.3	1	0	0
Samba Bank	A3.6	2	0	0
	A3.9	1	1	1
Alfaransi Bank	A3.14	4	0	0
Alahli Bank	A3.16	1	1	2
	A3.18	1	0	0
	A3.19 ABC	3	0	0
STC	A3.26 A	1	0	0
	A3.26 B	4	0	0
	A3.28	1	0	0
Altheer	A3.32 A	1	0	0
	A3.32 D	1	0	0
Nesma	A3.36	1	1	2
AwalNet	A3.40 B	1	0	0
	A3.40 C	1	0	0
	A3.40 D	1	0	0
Almarai	A3.51	50	0	0
Nadec	A3.53 B	1	0	0
Saudia	A3.57	1	0	0
	A3.59	0	2	3
	A3.59	1	1	1
	A3.59	1	0	1
Gasco	A3.71	1	0	0
SECO	A3.73	3	0	0
AEC	A3.77	6	0	0
Sabic	A3.82	0	1	0
Jarir	A3.90 C	7	0	0

Saudi websites are totally restricted by Islamic law in the representation in any media of the general appearance of women in public and their attitudes towards men. This attitude of Saudi woman is based on the religious aspects that permit woman to show her hair only to any other woman or to her close male relatives in private. The form of Islam in Saudi Arabia does not allow a woman to exhibit herself at all in public. When we look to the Saudi woman in some images in some of the websites, we notice a shy manner as represented by a downcast look in her eyes. Women are permitted to shake the hand of another woman but not of any male with the exception of the close relatives that are allowed by Islam. The one occasion where a woman was represented by herself was in the Sabic site and this is an

example that is illustrative of Islamic laws. This woman is shown in a contemplative private moment of reflection. Her face is shown but she is alone and so does not break any Saudi dress rules. Indeed her head is downcast and this representation of shyness is appreciated in Saudi society. Interestingly only 5 sites out of the 20 described here did not have any gender or child representations; the Australian number was twice that.

5.4 Methods 2: Content Organisation (Organising Schemes)

At first sight, the organising schemes for the Australian and Saudi Arabian home pages seem to be inconclusive. Not only are homepages analysed for the recognised content organising schemes (Rosenfeld and Morville, 1989) but additional pages were also considered on occasion. In no way are the results presented here to be construed as in any way being comprehensive either for these additional pages or for the website as a whole. Nonetheless there were some interesting results.

Australian Transport and Tourism sites appear to utilise exact geographic schemes which seems reasonable given their line of business. But exact organising schemes of any kind are hardly used in any other sector. What appears to be much more commonly used on Australian web pages are ambiguous schemes and there is a clear spread across the different types of ambiguous schemes especially in banking and telecommunications. Including these two sections and also across all categories it is the Ambiguous Task Oriented that is represented across all business categories excluding food (which parenthetically only has two businesses in it). See Table 5.8 for Australia organising schemes by business category.

Strangely enough, this last result concerning the prevalence of Ambiguous Task Oriented schemes across almost all categorises is also mirrored in the Saudi Arabian websites as well, and interestingly, it is also in the food category where we see the only exception to the use of task oriented schemes. The function of the food category websites both in Australia and Saudi .Arabian corpora seem to be for the purposes of establishing a web presence and not oriented towards e-tailing of any kind. The use of Ambiguous Task Oriented schemes makes sense in other categories. Apart from this similarity, Saudi Arabian websites utilise a much broader spread the organising schemes although ambiguous ones seem to still be preferred, see Table 5.9. It is difficult to come up with a compelling reason to account for this pattern but arguably, as we have complex multiple tenor relations in Saudi sites compared to those of Australia, one possibility might be that a broader selection of organising schemes is required to contain the content for this larger number of participants.

Table 5.8: Organising Schemes by Business Category - Australian Web pages

Key:
Exact: Chronological, Geographical, Alphabetical; *Ambiguous*: Task-Oriented; Topical, Hybrid, Audience Specific

	Organising Schemes							
	EC	EG	EA	ATOR	ATO	AME	AHY	AAS
Banking and Insurance								
Commonwealth				1	1		1	
NAB						1	1	1
ANZ						1	1	1
Bankwest					1		1	1
AAMI				1				
Telecommunications								
Dodo				1	1		1	1
TPG				1				
Telstra	1							
Optus								1
Food								
Dairy Farmers					1		1	1
Parmalat								1
Transport and Tourism								
Murrays		1		3				
Platinum Australia		1						
Travelscene				1				
Energy								
AGL	1			1				
EnergyAustralia				1				
Other								
Leading Edge Electronics		1		1				
Holden				1		1		
Officeworks			1	1	1			

Table 5.9: Organising Schemes by Business Category- Saudi Arabian Web pages

Key:
Exact: Chronological, Geographical, Alphabetical; *Ambiguous*: Task-Oriented; Topical, Hybrid, Audience Specific

	Organising Schemes							
	EC	EG	EA	ATOR	ATO	AME	AHY	AAS
Banking and Insurance								
Alrajhi			1	1	1		1	1
Samba			1			1		1
Alfaransi	1							
Alahli					1		1	1
Tawuniya	1	1	1		1		1	1
Telecommunications								
STC	1		1	1	1		1	1
Atheer				1				
Nesma				1			1	1
AwalNet	1			1				
Naseej					1			
Food								
Almarai	1				1		1	1
Nadec	1					1		
Sadafco					1			
Transport and Tourism								
Saptco				1				
Fursan				1				
Energy								
Gasco						1		
SECO				1				
Others								
AEC	1				1			
Sabic	1	1						
Jarir				1				

5.5 Methods 3: Content Relations 1 - Image Analysis

The image analysis of Australian home pages is provided in Table 5.10 while the image analysis for the Saudi Arabian sites is provided in Table 5.11. As per the section 4.5, four resources are used to explore the semantics of images. These include mood (demands and offers) see subsection 5.5.1, subjectivity/objectivity (involvement and power) see subsection 5.5.2, social distance (intimate/personal, social and public) see subsection 5.5.3, and modality (real and unreal) in subsection 5.5.4.

5.5.1 *Mood*

Mood is the semiotic resource that distinguishes between offers and demands. The preference as to which is used on eBusiness websites in general is the offer. This is the case in both Australian (Table 5.10) and Saudi Arabian websites (Table 5.11). An example of where the image analysis can get interesting is the logo used for the AAMI insurance site which features a woman almost face on. This would otherwise be interpreted as a demand; however the woman is wearing an earpiece signifying that they are an agent waiting for a customer's call. What is on offer is a promise of a human service agent to take your enquiry or provide you with information.

5.5.2 *Subjectivity/Objectivity*

Recall from subsection 4.5.2, that objectivity and subjectivity in an image relates to both involvement and power. Both these dimensions have been tabulated separately in Tables 5.10 and 5.11. There does appear to be a mix of both involvement and engagement for both Australian and Saudi Arabian sites. While it is unreasonable to generalise from two instances of websites within some business categories, there appears to be a roughly even mix of involvement and exclusion operating in the images on Australian websites. When we look at cases where there is exclusion these seem to make some degree of sense. For example, the image of a mother and child sharing a private moment with each other as part of a banner image about breast cancer sees the reader excluded because the participants have their backs turned to the viewer. In the case of Saudi sites, there appears to be a slight preference for involvement over exclusion but perhaps also some preferential use of one or the other in some business categories. For example, Saudi Arabian Transport and Tourism and Energy companies tend to present images that exclude, while the food category tends to use images

to include. In terms of power there is a strong preference in both Australian and Saudi Arabian websites for non-intimidating low angle shots (that is low power) but there are exceptions. In the energy category, Saudi websites show pictures of high technology production facilities and these are usually taken to support provide a high angled power shot. In the Australian 'others' business category there is a mixture of high and low angle shots and this represents the variability in that category.

5.5.3 *Social Distance*

Social Distance as represented typically in the banner images on homepages is also revealing. The Australian websites utilised a mix of social distances a close up which creates intimacy, a medium shot that is often associated with business or formal settings and a long shot that is generally associated with the public sphere. In contrast the Saudi Arabian websites appear to have a noticeable preference for medium shots in images. This is often because family groups are being photographed and so the possibility of creating intimate social distance with close-ups is greatly reduced.

5.5.4 *Modality*

Modality is a resource that distinguishes between real and unreal and here too there are noticeable differences between the Australian and Saudi Arabian corpora. For the most part Australian websites utilise the real in crafting imagery on websites - particularly for banner images. There are notable exceptions. One particular instance is Bankwest that uses an otherwise appropriate couple, presumably attempting to get a loan from the bank, and they appear to be interacting with a toy flower with a face on it! In most business categories

Australian websites utilise the real, but within the telecommunications category all of the

Table 5.10: Image Analysis - Australian Web pages

Key: *Mood*: Demands and Offers; *Subjectivity/Objectivity*: *Involvement*- Involvement/Exclusion; *Power*- Low Angle (low power), High Angle (high power); *Social Distance*: Close-up (intimate), Medium shot (Business or formal), Long Shot (Public); *Modality*: Real, Unreal (Appendix A1)

Organisation	Figure	Mood	Involvement	Power	Distance	Modality
Banking and Insurance						
Commonwealth	A1.1 A	OF	E	LA	C	R
NAB	A1.5 A	OF	I	LA	M	R
ANZ	A1.10 C	D	I	LA	M	R
Bankwest	A1.15 A	OF	E	LA	C	UR
AAMI	A1.20 B	OF	I	LA	C	R
Telecommunications						
Dodo	A1.24 B	OF	I	LA	M	UR
TPG	A1.28 A	OF	I	LA	M	UR
Telstra	A1.32 A	OF	E	LA	C	UR
Optus	A1.36 A	D	E	LA	M	UR
Food						
Dairy Farmers	A1.40 A	OF	E	LA	L	UR
Parmalat	A1.44 A	D	I	LA	C	R
Fleurieu	A1.48 C	D	I	LA	C	R
Transport and Tourism						
Murrays	A1.53 B	OF	I	LA	L	R
Platinum Australia	A1.57 C	OF	I	LA	C	R
Travelscene	A1.61 D	OF	E	LA	M	R
Energy						
AGL	A1.65 A	OF	I	LA	M	R

EnergyAustralia	A1.69 A	OF	E	HA	M	R
Others						
Leading Edge Electronics	A1.73 B	D	I	LA	M	UR
Holden	A1.78 A	OF	E	HA	M	R
Officeworks	A1.83 A	OF	E	HA	M	R

images are unreal and artificial. This goes to the abstract nature of the service that is being offered. It is difficult to use real imagery to convey a concept like bandwidth. For download speed, one website utilised a speedometer. Saudi telecommunications websites did use real modality in the images selected for display on these web sites and so for Nesma, AwalNet and Naseej either family settings (Nesma), participants somehow identical or representative of specific client types (AwalNet) or actual representations of technology (Naseej) were used to ground what would otherwise have been abstract images, see Table 5.11.

Table 5.11: Image Analysis - Saudi Arabian Web pages

Key: *Mood*: Demands and Offers; *Subjectivity/Objectivity*: *Involvement*- Involvement/Exclusion; *Power*- Low Angle (low power), High Angle (high power); *Social Distance*: Close-up (intimate), Medium shot (Business or formal), Long Shot (Public); *Modality*: Real, Unreal (Appendix A3)

Organisation	Figure	Mood	Involvement	Power	Distance	Modality
Banking and Insurance						
Alrajhi	A3.1 A	OF	I	LA	M	UR
Samba	A3.6 A	OF	E	LA	L	R
Alfaransi	A3.12 A	D	I	LA	C	R
Alahli	A3.16 A	OF	I	LA	C	R
Tawuniya	A320 A	OF	I	LA	M	UR
Telecommunications						
STC	A3.26 A	OF	I	LA	M	UR
Atheer	A3.32 A	D	E	LA	M	UR
Nesma	A3.36 A	OF	I	LA	C	R
AwalNet	A3.40 D	D	I	LA	M	R
Naseej	A3.45 D	OG	I	LA	M	R
Food						
Almarai	A3.49 A	D	I	HA	M	R
Nadec	A3.53 A	OF	I	LA	M	R
Sadafco	A3.57 A	OF	I	LA	M	UR
Transport and Tourism						
Saptco	A3.61 A	OF	E	LA	L	UR
Fursan	A3.65 A	OF	E	LA	L	R
Energy						
Gasco	A3.69 A	OF	E	HA	M	UR
SECO	A3.73 A	OF	E	HA	M	R
Others						
AEC	A3.77 A	OF	I	LA	M	R
Sabic	A3.82 A	OF	E	LA	C	R
Jarir	A3.87 C	D	I	LA	M	R

There are several ways in which overt cultural differences are signalled in Saudi Arabian website images. The systemic image analysis can be used as a point of departure for subsequent readings of these images including the identification of specific signs associated with nationality (subsection 5.5.5), customs and traditions (subsection 5.5.6), dress codes (subsection 5.5.7), and direct religious references (subsection 5.5.8).

5.5.5 *Signs of Nationality*

In terms of images (national flags, symbols, or iconography) or colour schemes (for example, green and yellow which is an often used Australian colour scheme employed to represent sports teams for example), there appear to be absolutely no explicit national references in any of the Australian websites considered. There is some use of the environmental imagery as a kind of indirect reference to the country. This is evident in the 'bush setting' in main banner images of companies like Commonwealth Bank (Figure A1.1 A), and less obviously in the dray rainforest scene shown in banner image of Murrays (Figure A1.53 B). Platinum Australia has used a considerable number of illusions to Australian settings including an outline map of Australia (Figure A1.60 A), an explicit representation of nationality, Sydney Harbour Bridge as an example of national iconography (Figure A1.60 B), and an outback scene (Figure A1.60 E). Less obviously Australian are the none-the-less not uncommon scenes of vineyards (Figure A1.60 C) and an isolated beach (Figure A1.60 D). These are not unique to Australia but in the contexts of other image on this site all could be interpreted as Australian. Both Murrays and Platinum Australia are travel agents and the currently strong dollar and European and American financial difficulties international travel to Australia has slumped so not surprisingly these travel companies tries to develop and internal market for their services. In the category of Australian travel companies is TravelScene. Noticeably absent are any national references in its images. This is because its core business is selling

overseas airfares which with a strong dollar are in high demand by Australians. All up it is not surprising that national imagery can be found in Travel category companies. A final example of what might at first appear to be national imagery is the use of an outline map of the country by Leading Edge Electronics but this is simply a visual way of implementing a store locator function across the nation and it serves up to its readers only the vaguest of 'national' messages.

In contrast within the Saudi Arabian sites there are many overt signs of nationality if one is familiar with this culture. When we look to some cultural indications, guides and rules that relate to the Saudi culture the Samba Bank's website comes to mind, see appendix A3.2.2. Figure A3.11-A shows Saudi people working in Samba Financial Group. This group used to be named "The Saudi American Bank" but by using two Saudi people with their traditional clothes, it stresses the point that the banks has change his name and reorientated its view back to Saudi Arabia. The traditional clothes also give the impression that this bank is implementing the ministry of labour rules referred to as the "Saudisation Plan" which requires that private sector companies in the kingdom to employ Saudi workers.

It also demonstrates the protocol that within the Saudi working environment Islamic rules requires that males and females are segregated when providing services to customers. As a consequence, the image shows two men, one an employee at the bank and the other a customer. In addition to that, the way that these two men are sitting represents the Saudi tradition in respecting each other. There is evidence of people who have their feet on the ground as a mark of respect to each other.

5.5.6 Customs and Traditions

None of the Australian websites considered here provided any indications of specific cultural signs that would explicitly signal 'being Australian'. In contrast there are a number of such signs throughout the Saudi corpus. For example, the Alrajhi bank described in Appendix A3.2.1 has a banner image in Figure A3.5 A reveals many aspects of the Saudi culture. It shows demonstrative welcome by a crowd of people for a person who arrives by plane from his trip in the airport. Culturally, there is an expectation of just such a welcome for an arrival back home. The bank is trying here to give the impression that a regular person (a customer) is tired from looking for ways to facilitate his financial life. After finishing from the trip of looking for the best financial solutions, the customer will find this bank more welcoming, and he will forget the difficulties faced in their financial journey.

The banner image of the Alfaransi bank (see Appendix A3.2.3 and Figure A3.15 A) shows a number of interesting aspects of Saudi culture. Horses in the Saudi culture mean old heritage, power, confidence, being fast, and many other good characteristics. The bank is signalling itself as a preferred choice for older people in the country while still signalling that it is a better choice for the younger generation.

5.5.7 *Dress Codes*

None of the Australian websites indicate any kind of dress code. There are times when men in images wear suits, that is, they are in formal kinds of settings (see for example, the Bankwest banner image, Figure A1.19).

The Saudi dress codes are specific. For men this consists of a *thobe* (robe) and a head cover either a *shumagh* worn in winter and made of red thick wool or the light weight summer white summer alternative called the *qutrah*. The shumagh or qutrah are held in place by a black head band called the *oqal*. The public dress codes for women consist of a *hijab* or head covering which is designed to hide a women's hair in public, an *abaya* or black outer garment the function of which is to hide the female form, and on occasion a face covering or *niqab* which is designed to cover everything but the eyes.

In the Nesma telecommunications site (see Appendix A3.3.3), we see traditional dress of a family group within the home, refer to Figure 6.39. The father is only wearing a thobe without covering his head with traditional cover shumagh or ghutrah which means that he is resting in his home and in a relaxed position. In this picture we also see a Saudi woman wearing informal clothes inside her house. She does not need to wear abaya because she is required to do so in this family setting. The Al-Ahli Bank in Appendix A3.2.4 specifically Figure A3.19 A with the family members in a picnic shows the wife and mother as a muslin woman is wearing the abaya as a cover for her body.

5.5.8 *Direct Religious References*

No religious media was shown on Australian websites studied. This is a consequence of the separation of church and state. The Kingdom of Saudi Arabia is a religious state and so it is not surprising that media signalling religious events, calendars, and practices are often evident. The Alahli Bank (NCB) in Appendix A3.2.4 website has an image on its home page that refers to many aspects of the Saudi culture, see Figure 5.1 (a). It represents the occasion of the holy month of Ramadan and the light that is used by the people in Saudi Arabia

especially in the western region during each night of Ramadan. This image has been connected to the text “calculate your Zakat”. Zakat is a very important religious duty that every Muslim is obliged to perform. It involves making donations based on guides and rules taken from the Holy Qur’an and the prophet Muhammad (‘peace be upon him’). NCB is recommending that people pay their Zakat during the holy month of Ramadhan using the facilities that are available the bank’s website.

Figure 5.1: (a) Alahli Bank Ramadhan images, and (b) Alrajhi Bank Prayer Schedule

(a) Alahli Bank Ramadhan and Zakat Images		(b) Alrajhi Bank Prayer Schedule
		

As all Saudi are Muslims, we can see in Alrajhi Bank’s image Figure 5.1 (b) the presentation of the prayer time schedule on the front page of the bank’s website which gives a clear sign that this institution is respecting the religion and its rules. This respect also demonstrates the adherence of the bank to the strict Islamic financial laws, for example not charging interest.

When we look to some cultural guides and rules that relate to the Saudi culture we are drawn to STC Telecommunications company described in Appendix A3.3.1. One of the images is particularly subtle (see Figure 5.2 (a)). It incorporates the image of a mosque next to the picture of the two trees to express its feeling to congratulate the Saudi people of the holy month of Ramadan. Having the mosque in this picture gives the impression that this company

as the first national telecom company in the Kingdom that is following the Islamic rules in setting its strategy and direction in the business field. In addition to that, the sign of the two trees addresses the tradition that this country depends on trees as a source of life. The official emblem of the country has two trees and the sword between them. In addition to this, the STC banner image in Figure A3.31 A consists of a wistful smiling man imagining a building surrounded by the text “easier life”. This refers to the dream of most Saudi of owning a home.

In addition to this, we can find the translation of the Holy Qur’an link (Figure 5.2 b) in the left side of the website in the text “Holy Quran Translation” which reveals the importance of this Holy Book for Saudis as they are Muslims. It also gives sign to the visitor of this website of the priorities that this company is holding for the Quran as a holy book to Muslims.

Figure 5.2: (a) STC Ramadhan Image; (b) Button to request a translated Holy Qur’an on the Altheer Telecommunications company.

(a)	(b)
	

5.6 Methods 4: Content Relations 2 - Image-Text Analysis (Expansion)

The text-image relations for websites are the kind of semantic glue that links media messages together. The coherence of these messages is one way in which we know that a message is directed. Less coherence, that is a difference in the semantic relationship between media, allows for a more polysemic message but can be interpreted as less focused. Both the developers of web pages and the readers of them utilise these image-text relations to make sense of web pages by either opening up meanings and possible interpretations (less coherent), or closing down alternative meanings (making the page seem more coherent and directed).

When the observed image-text relationships in the Australian web pages are tabulated (see Table 5.12), we see that the most common why of relating image and text semantics is by means of augmentation a kind of Complementarity (see subsection 4.6.2 for details). The image is being used to extend or add new meaning to the text and above all these meaning are consistent with each other. The alternative way in which Complementarity occurs is through divergence- an opening up of the meaning potential of the media. The second most frequently used text-image semantics was the semiotic resource of exemplification. Exemplification occurs when the meanings of the text are enhanced more generally in the image. Exemplification is a resource that is part of the broader system of concurrence which seeks to find an ideational equivalence (or similar representations of reality) between distinct semiotic resources.

Specific sites appear to have a preference for one of the other, but in general there appears to

be no sector specific realisations of one image-text relation over another. Interestingly some Australian sites have a preference for one type over the other (see for example Telstra which uses exemplification, and AAMI, Dodo and Holden that extensively use augmentation). Clarification where one image clarifies and enhances the text and exposition where one media re-expresses the semantics of the other media are rarely used, and enhancement by space, time and cause is never used on the Australian website survey.

Similar results are found for Saudi Arabian websites, although the use of any one text-image relation is less evident than in the Australian sites (see Table A1.13). This could be evidence for a less rigorous attempt to match media to form cohesive messages. Possibilities include websites that have been built by North American developers who might be less adept at finding relatable images to match the provided textual content. There might be a smaller pool of images that are readily available, or this could be evidence of the spread of field and tenor relations we have observed. In any case, exemplification is not as frequently used. As with Australian websites, enhancement by space, time and cause are never used.

Table 5.12: Image-Text Analysis - Australian Web pages

Key: *Concurrence*: Clarification, Exposition, Exemplification, Homospatiality; *Complementarity*: Augmentation, Divergence; *Enhancement*: Manner, Condition, Spatial, Temporal and Causal (Appendix A1)

		Concurrence				Complement		Enhancement				
Organisation	Figure	Cl	Ep	Em	H	A	D	M	C	S	T	C
Banking and Insurance												
Commonwealth	A1.1 A					1						
	A1.2 B					1						

NAB	A1.5 A					1						
ANZ	A1.14 A					1						
	A1.14 B			1								
	A1.14 C					1						
	A1.14 D						1					
	A1.14 E							1				
Bankwest	A1.15 A			1								
AAMI	A1.23 A							1				
	A1.23 B								1			
	A1.23 C					1						
	A1.23 D					1						
	A1.23 E					1						
	A1.23 F					1						
	A1.23 G					1						
Telecommunications												
Dodo	A1.27 A					1						
	A1.27 B					1						
	A1.27 C					1						
	A1.27 D					1						
	A1.27 E					1						
TPG	A1.31 A					1						
	A1.31 B			1								
Telstra	A1.35 A							1				
	A1.35 B			1								
	A1.35 C			1								
	A1.35 D			1								
	A1.35 E			1								
	A1.35 F			1								
Optus	A1.39 A								1			
	A1.39 B						1					
	A1.39 C						1					

	A1.39 D					1						
Food												
Dairy Farmers	A1.43 A					1						
	A1.43 B		1									
	A1.43 C			1								
	A1.43 D					1						
	A1.43 E		1									
	A1.43 F		1									

		Concurrence				Complement		Enhancement				
Organisation	Figure	Cl	Ep	Em	H	A	D	M	C	S	T	C
Parmalat	A1.47 A				1							
	A1.47 B			1								
	A1.47C					1						
	A1.47 D			1								
	A1.47 E						1					
	A1.47 F		1									
Fleurieu	A1.52 A				1							
	A1.52 B							1				
	A1.52 C					1						
	A1.52 D			1								
	A1.52 E					1						
Transport and Tourism												
Murrays	A1.56 A					1						
	A1.56 B								1			
Platinum Aust.	A1.60 A					1						
	A1.60 B				1							
Travelscene	A1.64 A					1						
	A1.64 B					1						
	A1.64 C		1									
	A1.64 D					1						
Energy												
AGL	A1.68 A						1					
Energy Australia	A1.72 A			1								
Others												
Leading Edge	A1.77 A					1						
	A1.77 B						1					
	A1.77 C			1								
	A1.77 D	1										

	A1.77 E			1								
Holden	A1.82 A					1						
	A1.82 B					1						
	A1.82 C					1						
	A1.82 D					1						
	A1.82 E					1						
	A1.82 F					1						
	A1.82 G					1						
	A1.82 H					1						
	A1.82 I					1						
Officeworks	A1.87 A					1						
	A1.87 B					1						
	A1.87 C					1						
	A1.87 D	1										
	A1.87 E			1								
	A1.58 F								1			

Table 5.13: Image-Text Analysis - Saudi Arabian Web pages

Key: *Concurrence*: Clarification, Exposition, Exemplification, Homospatiality; *Complementarity*: Augmentation, Divergence; *Enhancement*: Manner, Condition, Spatial, Temporal and Causal (Appendix A3)

		Concurrence				Complement		Enhancement				
Organisation	Figure	Cl	Ep	Em	H	A	D	M	C	S	T	C
Banking and Insurance												
Alrajhi	A3.5 A		1	1								
	A3.5 B					1						
	A3.5 C						1					
	A3.5 D						1					
	A3.5 E								1			
Samba	A3.11 A						1					
	A3.11 B							1				
	A3.11 C					1						
Alfaransi	A3.15 A			1								
	A3.15 B					1						
	A3.15 C						1					
Alahli	A3.19 A							1				
	A3.19 B						1					
	A3.19 C								1			
	A3.19 D.					1						
Tawuniya	A3.25 A						1					
	A3.25 B					1		1				
	A3.25 C								1			
	A3.25 D			1								
	A3.25 E	1										
Telecommunications												
STC	A3.31 A						1					
	A3.31 B						1					

	A3.31 C								1			
	A3.31 D					1						
Atheer	A3.35 A								1			
	A3.35 B								1			
	A3.35 C					1						
	A3.35 D					1						
Nesma	A3.39 A						1					
AwalNet	A3.44 A			1								
	A3.44 B						1					
	A3.44 C						1					
	A3.44 D					1						
Naseej	A3.48 A		1									
	A3.48 B					1						
	A3.48 C					1						
	A3.48 D					1						
	A3.48 E			1								
Food												
Almarai	A3.52 A			1								

		Concurrence				Complement		Enhancement				
Organisation	Figure	Cl	Ep	Em	H	A	D	M	C	S	T	C
Nadec	A3.56 A				1							
	A356 B						1					
	A3.56 C						1					
	A3.56 D			1								
	A3.56 E			1								
Sadafco	A3.60 A			1								
	A3.60 B					1						
	A3.60 C					1						
	A3.60 D					1						
Transport and Tourism												
Saptco	A3.64 A				1							
	A3.64 B				1							
	A3.64 C			1								
	A3.64 D			1								
Fursan Travel	A3.68 A					1						
	A3.68 B			1								
	A3.68 C					1						
	A3.68 C					1						
	A3.68 D					1						
Energy												
Gasco	A3.72 A						1					
	A3.72 B			1								
	A3.72 C						1					
SECO	A3.76 A					1						
	A3.76 B				1							
	A3.76 C				1							
	A3.76 D				1							
	A3.76 E				1							

Others												
AEC	A3.81 A						1					
	A3.81 B					1						
	A3.81 C			1								
Sabic	A3.86 A								1			
	A3.86 B	1										
	A3.86 C			1								
	A3.86 D			1								
Officeworks	A3.90 A					1						
	A3.90 B							1				
	A3.90 C					1						
	A3.90 D					1						
	A3.90 E			1								
	A3.90 F			1								
	A3.90 G					1						
	A3.90 H			1								
	A3.90 I		1									
	A3.90 J			1								
	A3.90 K					1						
	A3.90 L					1						
	A3.90 M		1									
	A3.90 N			1								

5.7 Methods 5: Navigation Systems described using System Networks

In this section, the system network representations of global navigation systems within categories and also across countries, is compared. The method for doing this was developed in section 4.7. The commutation test is applied to navigation option labels. If a similarity can be identified between labels in comparable navigation schemes (within category or across countries) then the test is said to fail; it is after all a uniqueness test after all is not a test for similarity. Having identified relatable options we then move down levels in the hierarchy to see similarities or differences in the expression of items. The purpose of doing this is to see if there are indications within categories of standard approaches to the design of navigation and to see the actual variability with which developers realise global navigation. While one would expect to see considerable variability, there would also be an expectation of a degree of conformance based on the fact that global navigation structures can be said to be effective and fit for purpose based on the fact that they by definition field taxonomies.

5.7.1 *Banking and Insurance*

Firstly, Australian banking and Insurance are examined in Figure 5.3 and second, to consider the comparable Saudi Arabian companies, in Figure 5.4. There are similarities within Australian Banks. The commutation test fails with both personal and business banking options. The most prominent split in global navigation options relates to personal banking on the one hand and whether there are more delicate options with regard. Typically, the navigation may be organised with a home position. More common however, is an ‘About Us’ option often with more delicate sub-options concerning the business, its history, and so on. Not surprisingly, this split between individual and business banking in the Saudi banking sites is also identified through a failed commutation test. Unlike the Australian bank navigation schemes, several of the Saudi banking sites also have prominent wealth

management options entirely absent on the Australian websites. This is a probable selection effect, there exist many Australian banks that also have wealth management options such as Macquarie Bank (but this is not considered this one in the sample of Australian sites).

The insurance sites immediately look much different to the bank sites - reflecting a fundamental difference in field that is not recognised in the company category classification adopted here. Part of the Australian AAMI site embeds a claim processing workflow into the navigation scheme (Get a Quote, Retrieve a Quote), but both AAMI and Tawuniya do share a similar participant classification around the types of insurance (Individual Insurance, Corporate Insurance for Tawuniya; Car, CTP, Home, Motorbike, Travel, Business).

Figure 5.3: Banking and Insurance - Australian Global Navigation

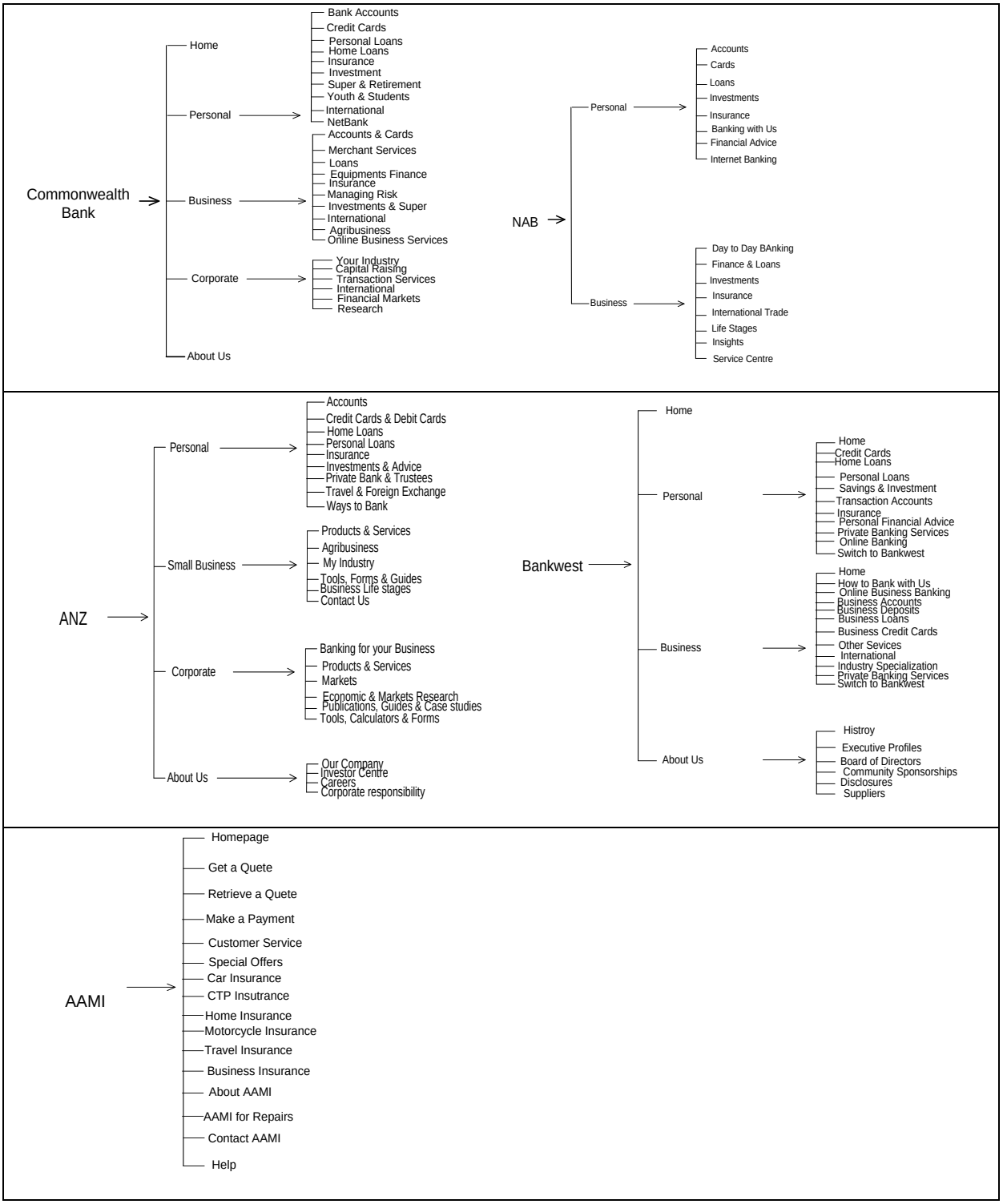
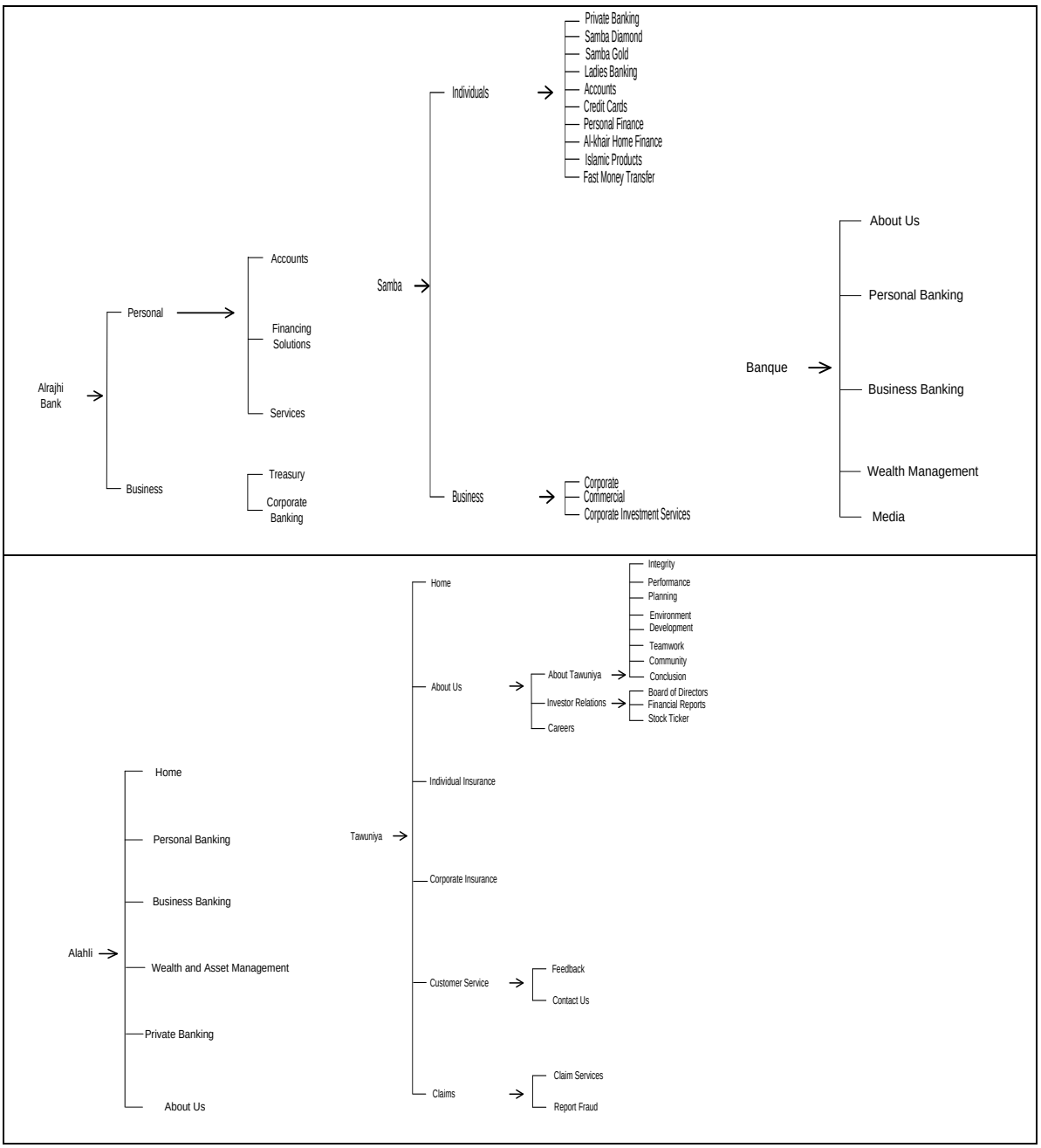


Figure 5.4: Banking and Insurance - Saudi Arabian Global Navigation



5.7.2 *Telecommunications*

There is considerable variety in the structure of the Australian telecommunications websites, see Figure 5.5. Half of these, DODO and Optus, split their offerings into personal and business (an example of field factoring previously seen with Banks). TPG and Telstar provide

lots of corporate information, but these also have a chaotic arrangement of global navigation options. Part of the explanation of circular reading options in Australian telecommunication websites likely to be this mixed field taxonomy. A similar situation occurs in Saudi Arabian telecommunication companies (see Figure 5.5). Interestingly, there are a number of similarities between the Australian Telstra site and the Saudi STC site - both large companies that have top level options for about/company overview, media, investors, and corporate governance/corporate citizenship. Out of the two of these STCs global navigation is the best organised.

Figure 5.5: Telecommunications - Australian Global Navigation

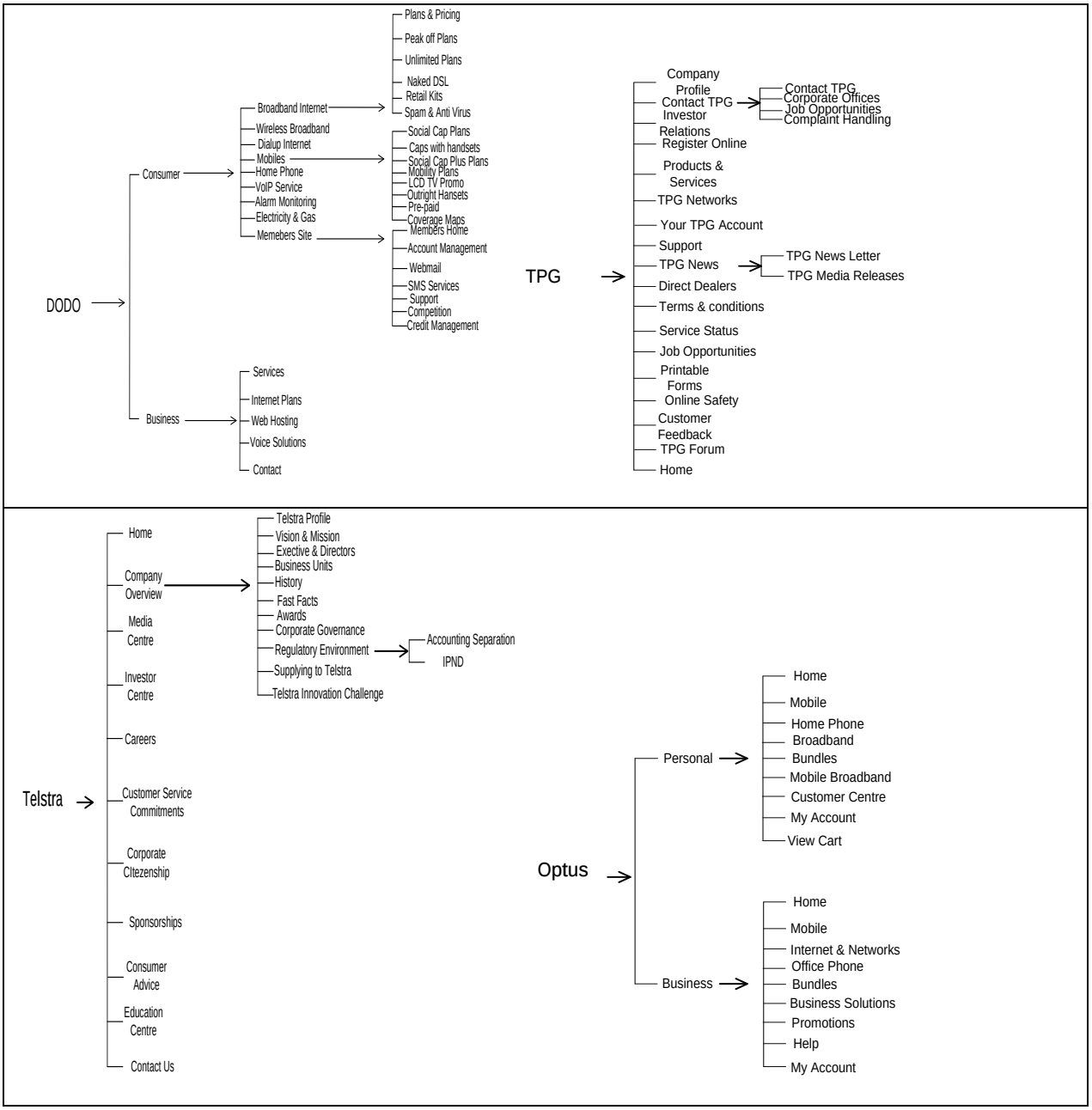
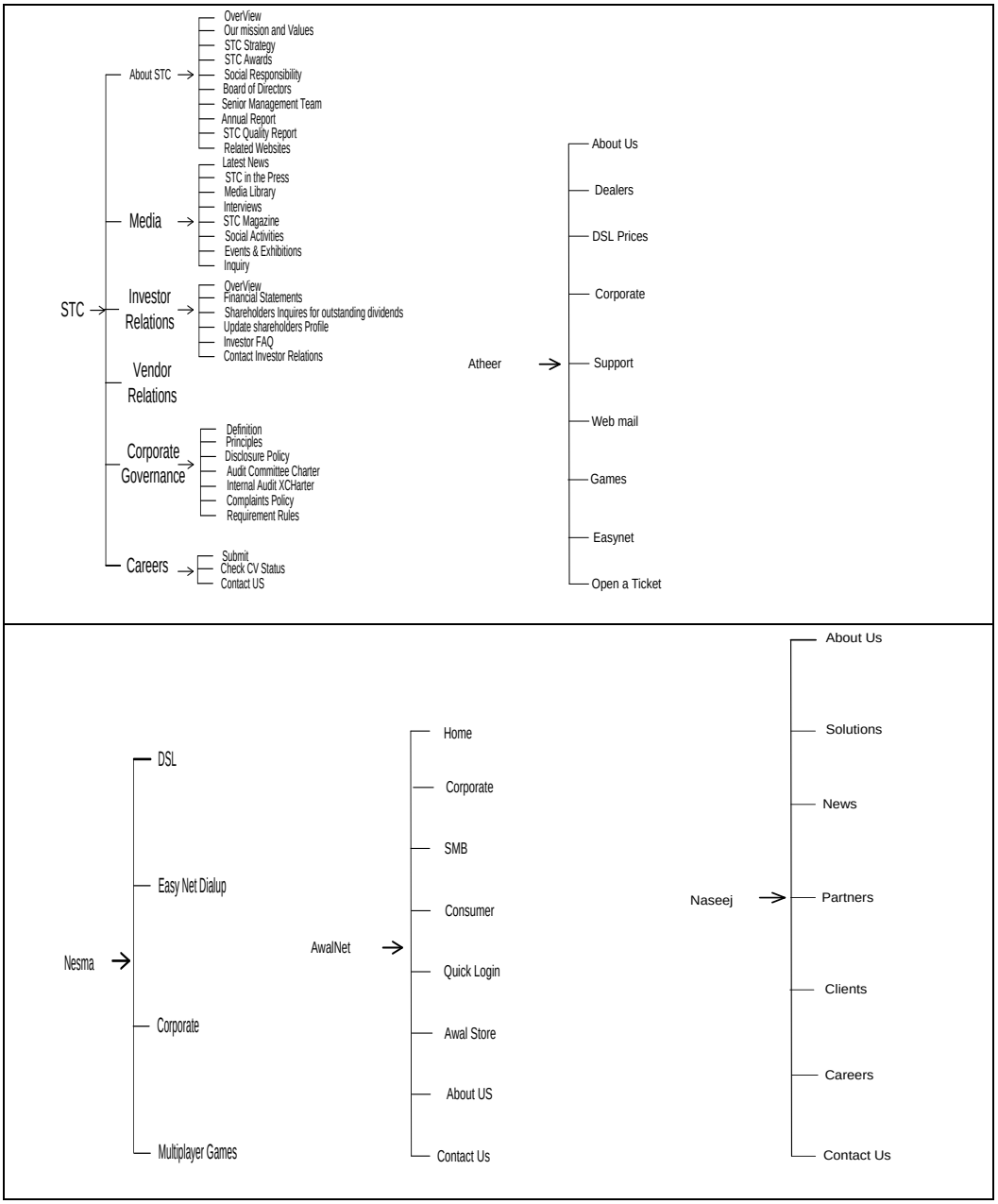


Figure 5.6: Telecommunications - Saudi Arabian Global Navigation



5.7.3 *Food*

Not surprisingly, the only commonality with Australian Food global navigation systems is the self-reflective ‘about us” option and a “products” option. All the Australian food companies had extremely simple global navigation schemes - amongst the simplest of any business

category. This does not necessarily make them bad navigation schemes, on the contrary, if they are consistently applied across all pages then they be examples of some of the vest schemes in this study. In contrast, while these same labels appear on the Saudi Arabian websites it is also true that they are much more extensive and given this appear to be flatter navigations structures. Flat system network structure with many options mean navigation with less useful because users have to read options- the options are not usefully grouped and so the user hunts and pecks at the navigation, that is they look for an appropriate option and eventually click a link. This increases the dwell time on the interface, takes time away from the actual content that the user should be engaging with and ultimately will mean that users flee the site.

Figure 5.7: Food - Australian Global Navigation

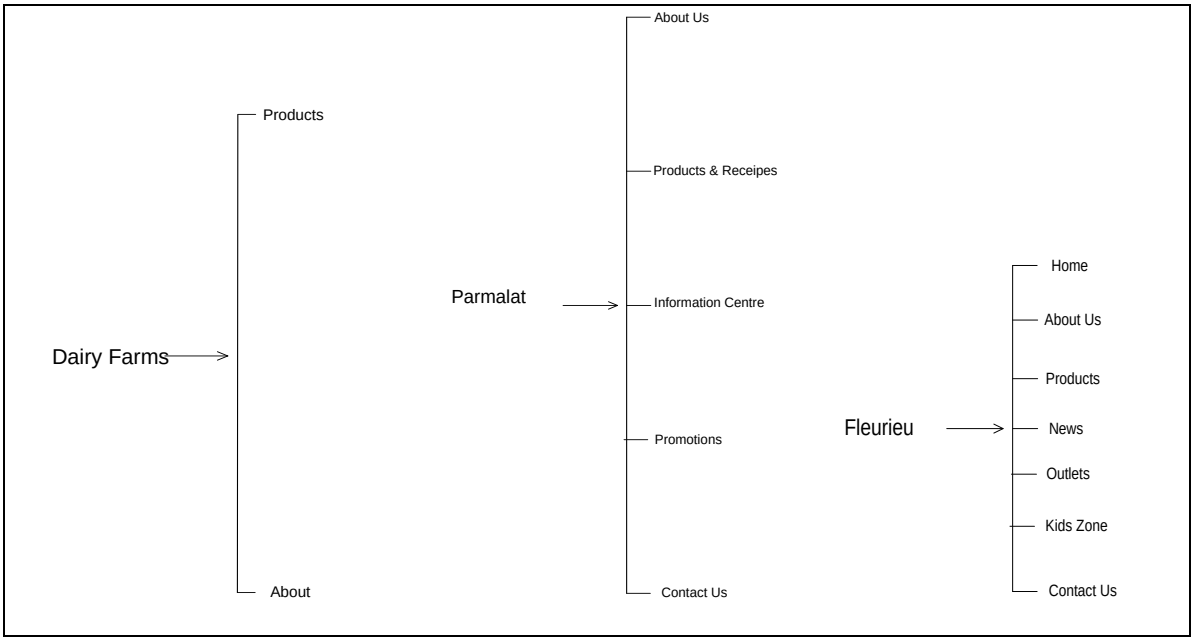
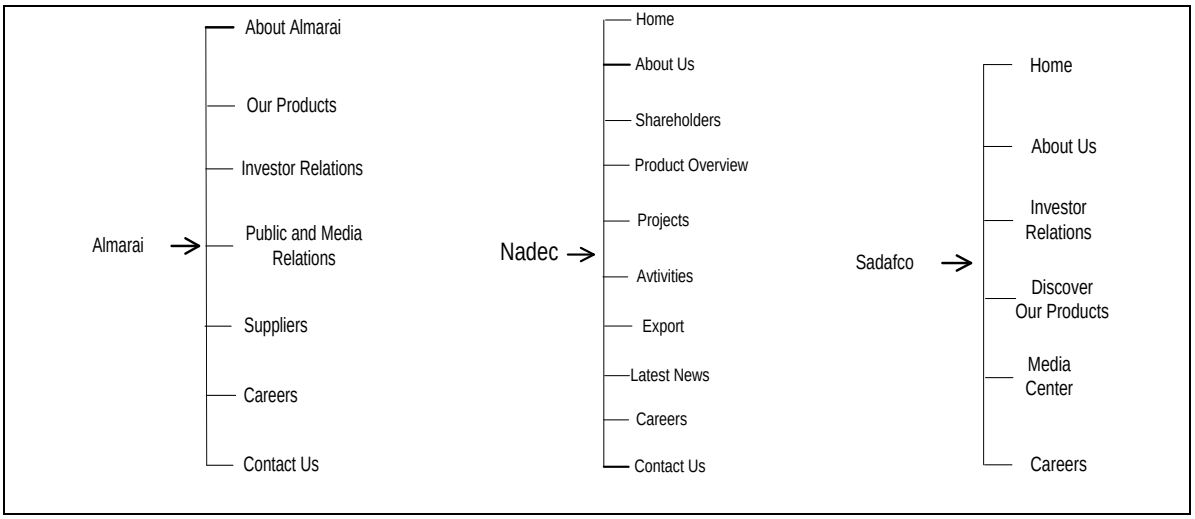


Figure 5.8: Food - Saudi Arabian Global Navigation



5.7.4 *Transport and Tourism*

With the exception of Fursan (see Figure 5.10), all sites have a “contact us” option but unlike other businesses, no further factoring of this option is provided. Oddly, two of the Australian sites have an “our/the difference” option at the top level of the global navigation scheme. Similarly one of the Saudi Arabian companies has a ‘vision and mission’ option. These options attempt to convey to the user the potential holiday maker the uniqueness of their particular business. The Murrays website (see Figure 5.9) is the most comprehensive website navigation of all the Transport and Tourism sites with the ability from the admittedly obtusely labels ‘Express Services’ option, to make a booking, view timetables, events and information, provide answers to frequently asked questions and the ability to ask questions from a customer service manager.

Fursan uniquely provides information on destinations. This is an obvious omission from other navigation schemes, although companies possibly should point to existing internet resources rather than to attempt to create that media themselves. Fursan obviously organises its options

around the major aspects of travel and accommodation with sensible options like Flights, Cars, and Hotels. Several of the Australian sites appear to be more concerned with supporting a potential holiday taker by building confidence in the company rather than providing them with the tools to search and develop a consideration set by themselves. This might represent a different in the generation to which these services are being pitched. Murrays is a bus company and so its services are more likely to be positioned to Australian retirees and older people, whereas Fusan may be supporting young Saudi Arabians.

Figure 5.9: Transport and Tourism - Australian Global Navigation

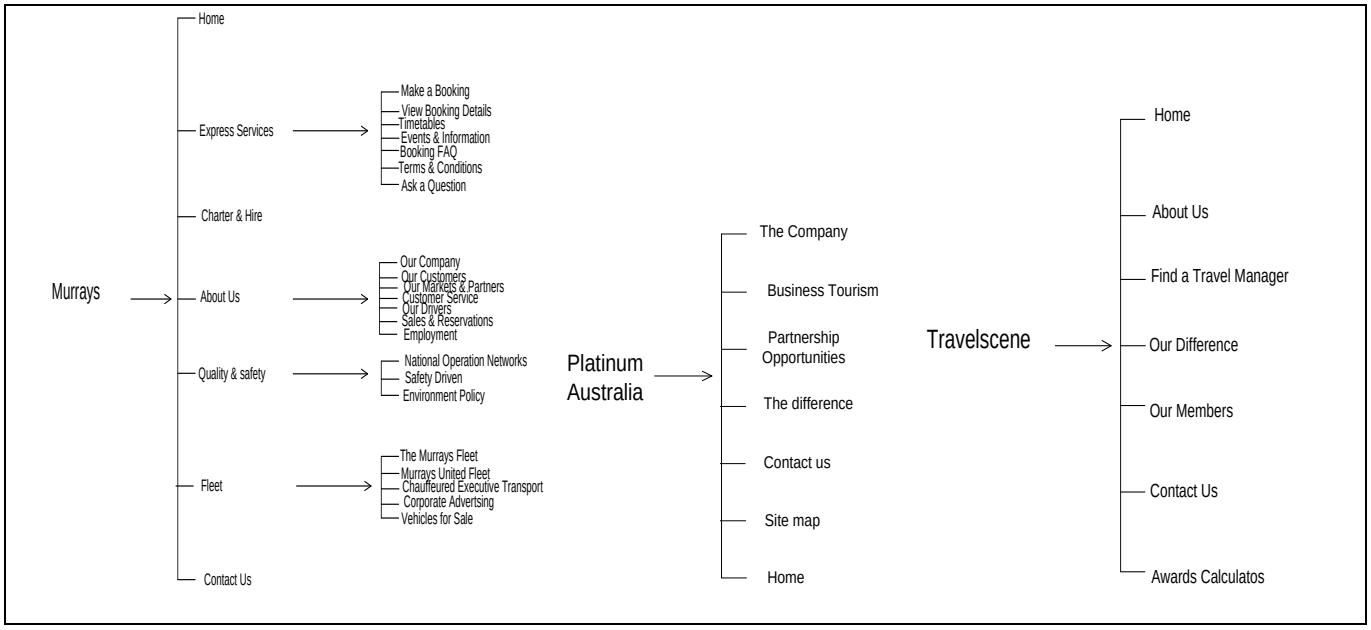
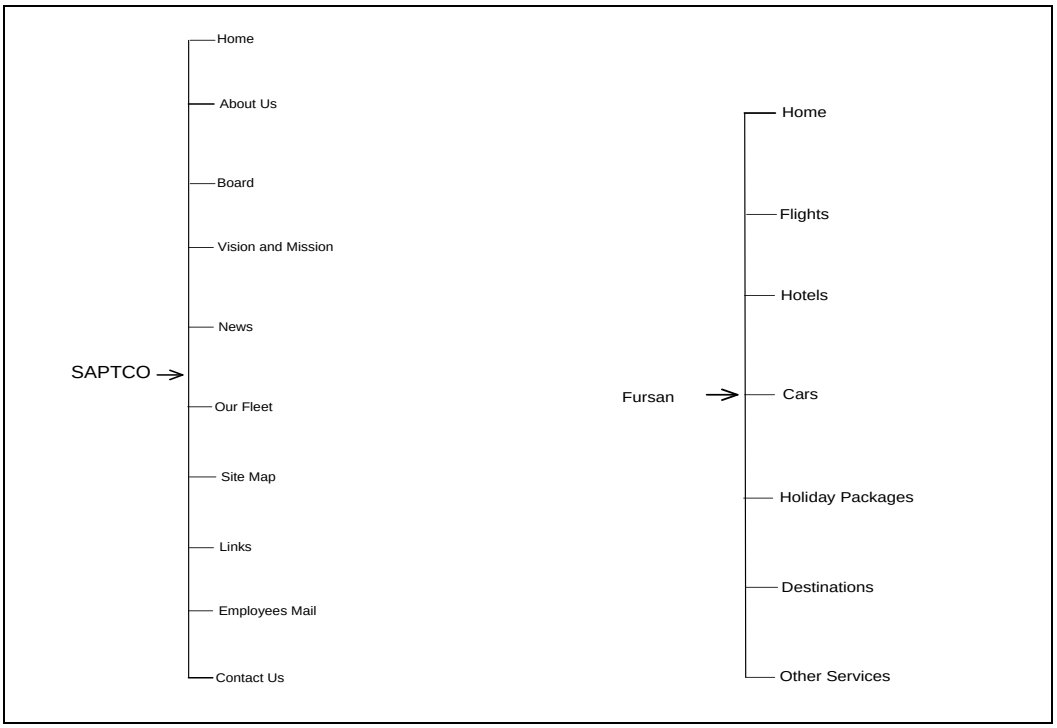


Figure 5.10: Transport and Tourism - Saudi Arabian Global Navigation



5.7.5 *Energy*

The Australian energy companies (see Figure 5.11), as evidenced by their websites, are domestic and corporate energy suppliers and distributors. AGL and Energy Australia use this fundamental tenor split ‘your home/residential’ and your ‘business/business’. However, across this category and also in comparison to the Saudi sites AGL has the best organised global navigation schemes. Interestingly, AGL is primarily a domestic energy provider given the lack of factoring in its business option.

The Saudi Arabian energy web sites (GASCO and SECO) (see Figure 5.12), have very different navigation structures and this is in all likelihood about the direction that the companies face. The Australian companies are customer facing, whereas the two Saudi Arabian energy companies considered here are producers of energy primarily and are

relatively upstream compared to their Australian counterparts. This difference in field and tenor makes for a very different structure and organisation of global navigation schemes-more similar to their compatriots.

5.7.6 *Others*

This category is the most diverse as evidenced by the individual company descriptions in Appendix A1 (see Figure A1.11 for Australian web sites) and Appendix A3 (see also Figure A3.12 for Saudi Arabian websites). The only comparable options are current catalogue (Leading Edge Electronics), products and solutions (AEC), products and services (Holden and Sabic) and our categories (Jarir). All of these navigation schemes are not optimal, but the best of them based on purpose is Holden with well organised and factored information in Fleet and Products and services sub-options. Two of the Saudi sites, AEC and Sabic, have explicit news and media options.

Figure 5.11: Energy - Australian Global Navigation

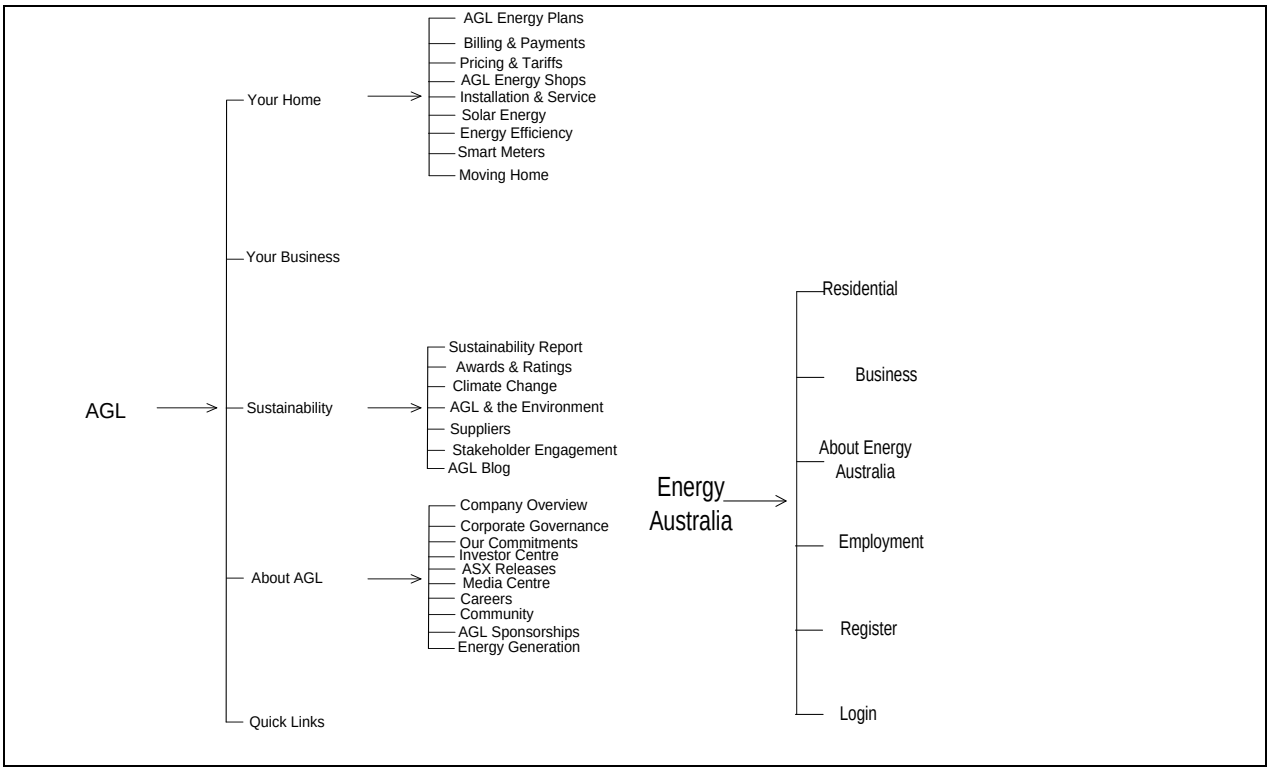


Figure 5.12: Energy - Saudi Arabian Global Navigation

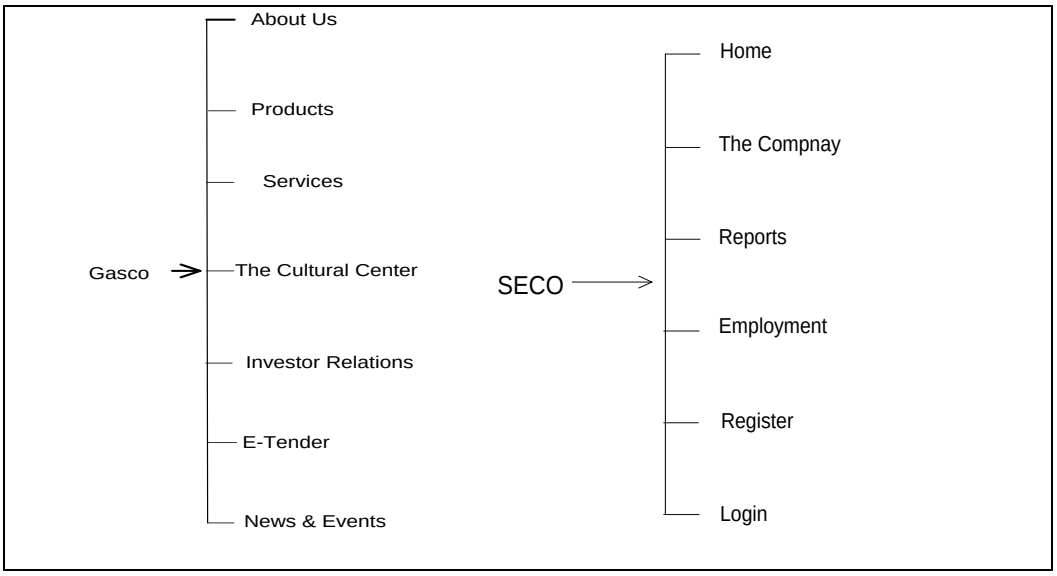


Figure 5.13: Others - Australian Global Navigation

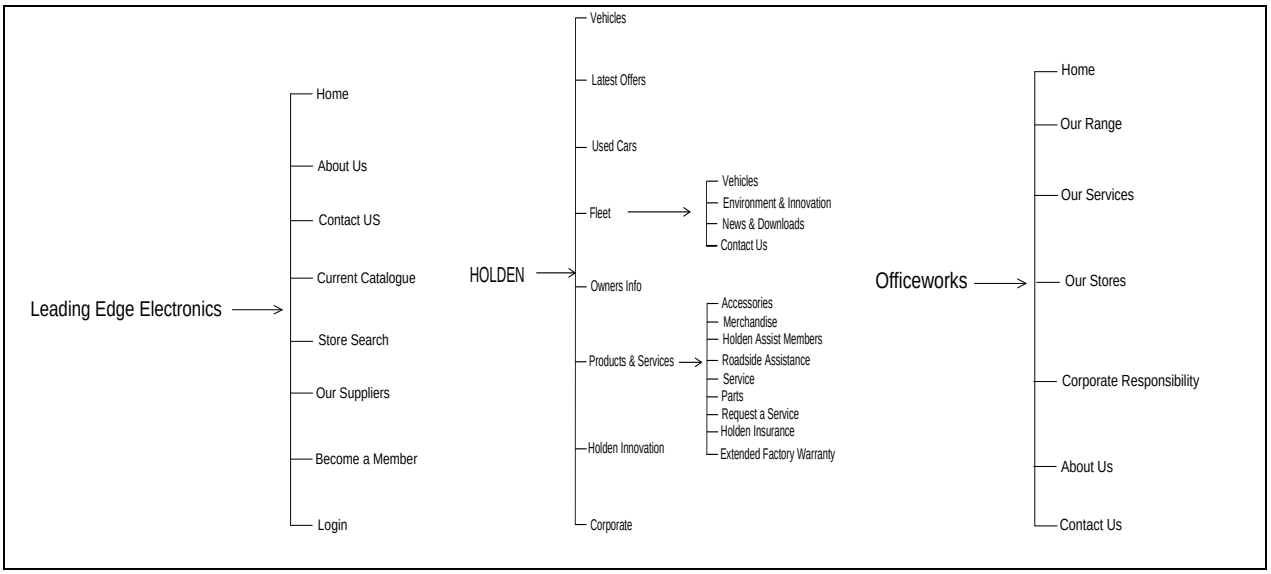
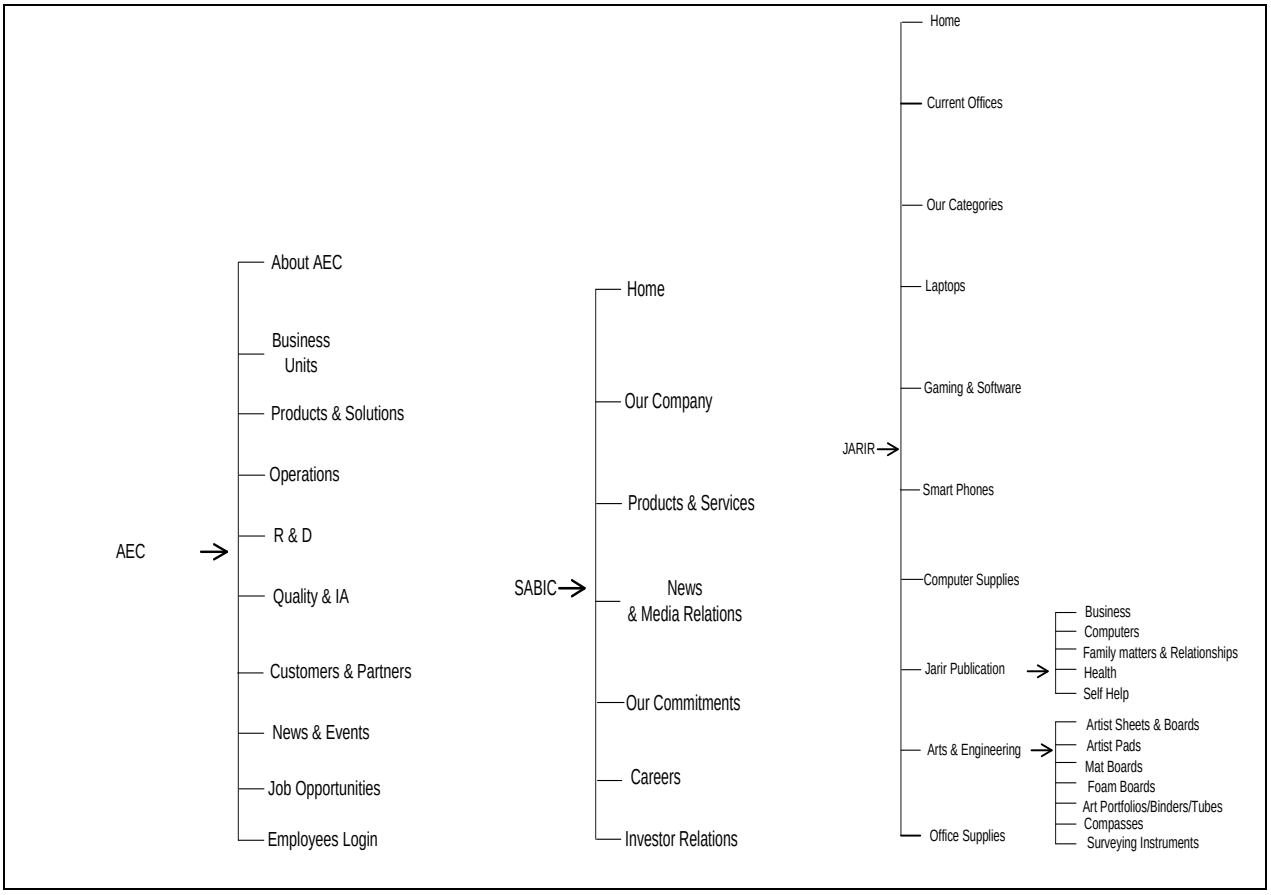


Figure 5.14: Others - Saudi Arabian Global Navigation



5.8 Summary

In this chapter, the results of the application of the systemic semiotic web system methodological framework developed in Chapter 4 to the Australian and Saudi Arabian websites described in Appendix A1 and A3 respectively, have been consolidated. In general, it can be said that the semantic methods that were employed did provide a novel and interesting way of examining these new kinds of texts. A surprising outcome is the utility of situational context when applied to the web pages, image analysis to gain insights and form the basis of a content reading of images, and the image text analysis methods for accounting for how media make messages (not necessarily uniform or coherent ones at that) across the web page and throughout websites. Of particular interest, is the fact that most web site navigation structures do not reflect so much the actions and activities of the business or indeed in many cases the clientele that they serve but that they are often rather confusing classification for content that might well serve the purpose of driving away customers rather than encouraging them to stay. In summary, most definitely there are a great many specific, and now with the specification of this framework, identifiable cultural differences in this selection of eBusiness websites from Australia and Saudi Arabia.

CHAPTER SIX

Conclusions and Further Research

6.1 Introduction

This thesis set about trying to develop an approach to the analysis of actual eBusiness websites that could reveal actual cultural differences if they existed. The idea was that websites could be analysed for cultural differences and be identified in actual eBusiness websites, then it would enable us to see and hopefully appreciate the broad range of meanings that can be made with these kinds of technologies, would be evident. Perhaps rather than treating all cultures the same way it may be possible to build more appropriate and specific messages addressing customers and users from particular cultures. It might also be possible to create a greater understanding and even tolerance - perhaps even respect - of cultural differences at least at the level of marketing communication practices and also those practices associated with the information systems practitioners who develop these sites.

In section 6.2, eBusiness websites as communication exercising the approach developed here without detailed reference to the previous theories and methods which can be found elsewhere, is described. The developmental viewpoint of a systemic semiotic approach has been provided against the background of the existing state of the art in communication technology, web communication and culture in Chapter 2, and its theoretical foundations explored in Chapter 3. The purpose of section 6.2 is so that a new analytical voice can be heard in its own terms. This exercise is an interesting one because it emphasises the newness of a systemic semiotic approach to this domain. At the same time, the intent of this section is to demonstrate the suitability of its concepts and the usefulness of the statements that can be formed from them.

In section 6.3, the thesis contributions, key findings and limitations of the study are considered. In subsections 6.3.1, 6.3.2 and 6.3.3, the theoretical, methodological and substantive contributions respectively, of this dissertation and cross reference these to their relevant sections in the thesis are detailed. In section 6.3.4, what constitutes limitations of this study are described and discussed. This discussion will be a useful preamble to section 6.4 concerning future research and what needs to be done to extend, standardise and automate where possible the intricate and lengthy communication analysis developed here. Where relevant, issues raised in the limitations may be cross referenced to subsections in section 6.4 on future research. Conclusions for the dissertation are provided in section 6.5.

6.2 A Systemic Semiotic Approach to eBusiness Web Systems

Understanding cultural differences in web sites is crucially important in the development of global electronic business. The development of culturally appropriate websites would doubtless assist the advancement of local electronic business as well. Respected authors like Hofstede (1980, 1884, 1991 and 1997) and Hall (1959, 1963, 1976, 1983 and 1991) have emphasised the significance of culture in communication. The combined approach of Hofstede and Hall forms a functional view of web system localisation based on content analysis of presumed, and some might claim stereotypical, cultural values (see a critical review in Chapter 2). Yet a major limitation of this received approach is that there is no adequately realised design practice that is theoretically and methodologically connected to it. The approach developed in this thesis attempts to go beyond the ‘cultural awareness’ and ‘cultural sensitivity’ toward other cultures (refer to the critique in Chapter 2) and instead develop an understanding of what is ‘culturally appropriate’.

Before culturally relevant and appropriate web development practices can be created, there is a need to understand precisely the relation between communication and meaning-making using web-based technologies and culture. This approach has been advocated by Hermeking (2006) but unfortunately it has not, until this thesis, ever been exemplified in marketing and related literatures. The reasons for this is that developing such an approach requires rethinking the ways communication, culture, technologies and 'the self' are theorised (refer to Chapter 3) and also how to operationalise relevant semiotic and communication theory through appropriate methods (refer to Chapter 4). Compatible semiotic theories in language and cultural studies referred to as the 'systemic semiotics' approach (Fawcett 1987, xviii) have been utilised and a framework for appropriate methods that can be applied to the detailed semantic analysis of web pages and navigation is developed. The aim of this type of analysis is to recognise cultural differences and also to account for them in design. The major features of the systemic semiotic approach under a set of relevant principles which include the adoption and utilisation of cultural and situational contexts are reviewed (subsection 6.2.1), a discussion concerning the appropriate media (modalities) to consider as well as the kinds of relationships between them (subsection 6.2.2), the articulation of a communication perspective on using the web (subsection 6.2.3), a corresponding perspective on developing web systems and sites based from a communication perspective (subsection 6.2.4) and possibility and implications of a systemic semiotic practice in web systems development one which takes up the challenge of a cultural appropriacy.

6.2.1 Communication Contexts: Culture and Situation

All communication whether it's spoken or written, and regardless of the technology through which it is delivered - a letter, the television or via the Web - is formed and interpreted within specific social contexts that include the situation for which the communication is relevant, as

well as the broader cultural context (functioning at the organisational or national level) that makes these situations possible. Our cultures, and the situations which are possible within them, pre-exist us and we are inescapably immersed within them (Hodge and Kress, 1974; 1979; 1988). To be meaningful when communicating, those that create messages necessarily utilise these situational and cultural contexts in order to make meaningful messages. Those who are the intended or unintended recipients of these messages necessarily utilize a knowledge or appreciation of the situational context in order to unpack or make sense of any message (Malinowski 1923, 1946). The approach adopted in this thesis, recognises the importance of these two contexts when attempting to understand communication (Halliday, 1978, 1985; Hasan, 1984, 1992; Eggins 1994, 2004). This is a defining characteristic of systemic functional linguistics that has also been adopted in social semiotics and applied to other modalities (Kress, 1988; Kress and van Leeuwin, 1990; Lemke, 1989).

The cultural and situational contexts are manifest in web systems and web pages. For various technical details concerning the fact that multimedia extensions to genre theory are not fully developed, this thesis does not explicitly analyse web pages for genre. However, it is clearly evident that this will be an important method when the theory and methods are created and tested (see section 6.8.6 for details of how these methods may be created and used). Nonetheless the generic structuring of web pages is everywhere evident in both Australian and Saudi Arabian websites (see Table 6.1 below for representative examples). Despite the fact that there are no Food Category examples of generic organisation of web pages provided, there is no sensible reason to consider that these are not evident on those sites. Whenever there is a need for routine-based information, a genre must be used.

Table 6.1: Evidence for the Generic Organisation of Web pages

Australian Web Sites			
Figures	*Generic Organisation*	*Company*	*Sector*
A1.3	Netbank Registration	Commonwealth Bank	Banking and Insurance
A1.7	Internet Banking Registration	National Australia Bank (NAB)	Banking and Insurance
A1.30	Broadband Registration	TPG	Telecommunications
A1.55	Making a Booking	Murrays	Transport and Tourism
A1.67	Pay Your Account	AGL	Energy
A1.81	Build Your Car	Holden	Others
A1.85	My Shopping Cart	Officeworks	Others
Saudi Arabian Web Sites			
Figures	*Organisation*	*Company*	*Sector*
A3.4	My Account	Alrajhi Bank	Banking and Insurance
A3.34	Ticket Tracking	Atheer ISP	Telecommunications
A3.38	Request a Quotation	Nesma Internet	Telecommunications
A3.67	Online Enquiry	Fursan Travel	Transport and Tourism
A3.75	Register	SECO Electricity	Energy
A3.4	Online Job Application	Jarir Office Supplies	Others

Web systems and the web pages that constitute them are thoroughly sufficed with evidence of their situational context. This is the case irrespective of the culture we are dealing with; in this case, Saudi Arabian and Australian websites. Web pages will have components which contain one or more labels, or images which signal what the web developer has in mind in terms of the social actions and activities communicated by the website (field) as well as the expected or anticipated audience for them (tenor). For single modal components (those with only one media), a label or text snippet may signal field directly, by stating for example 'Insurance'. Similarly tenor may be signalled by a label like 'Customer'. Alternatively, a picture which may be inferred as an 'Insurance' product or a 'Customer' may substitute for an explicit textual representation, but the interpretation of this is inherently polysemic (see Chapter 2). For multimodal components (those that utilise more than one media) field relations can get progressively more complex with multiple messages being made, as the media need not necessarily align in terms of their meanings. Consider for example, Component D of Alrajhi Bank in Figure 6.5 which shows an image of a youthful Saudi man in traditional head dress, together with two text snippets "Top-Up Your Finance" and

“Already have a Personal Finance? (sic) Find out how to get more ...” and a “More” button. The image of a man is not equivalent to any of the text snippets, but in combination multiple meanings are conveyed. The confidence of the man signals possible financial success which may be improved for a customer by taking up Alrajhi’s offer of more personal finance. There are five multi-modal components on that page and most reinforce these types of complex messages. Clearly field and tenor are interrelated as this previous example demonstrates.

Nor is navigation exempt from situational context. Global Navigation systems are not surprisingly formed in language and so unique labels are the starting point for both designing them (Rosenfeld and Morville, 1989) and using them. Typically navigation system networks are field taxonomies. While some navigation could potentially be substituted with icons this is generally very limited (for example a “House” for the home page). For example, in all Saudi Arabian sites only one site used icons in its primary navigation items but these were always accompanied by labels (see Fursan Travel Page Design in Appendix A3 6.65). No Australian website featured icons in navigation. Many websites used supplementary textual navigation at the bottom of the page; often a superset of the original primary navigation (see section 4.7).

6.2.2 Relevant Multiple Modalities

The Internet represents the latest in the development of the long line of communication mediums, and it is itself productive of entirely new ways of constructing meanings. Consider as examples the many and varied forms of social media, some of which are so new as to not yet have the prominence of Facebook (http://www.facebook.com/) or Twitter (http://twitter.com/), the latter being a global communications phenomena that was created as

recently as 2006. But what binds all of them is that media of various modalities, text, image, video and sound can be assembled in unconventional ways compared to traditional print media. Tumblr (https://www.tumblr.com/) is a new type of social media that provides users with the ability to assemble together text (written language, quotes, and dialogues), images (photos, slideshows), audio and video, together with links and to then publish this collection of media on the web using email on a mobile phone. It is computationally a relatively straightforward problem but provides a micro-blogging platform of considerably greater sophistication than short message services like Twitter that are limited to 140 characters and require other applications to handle longer messages and non-textual media. New forms of media are also created by subjecting traditional media to computation. The effect of computation is evident in the form of a banner gif that progressively reveals itself on a page to accommodate a slow internet connection, or be substituted by another image in the same frame on the web page. More extreme examples of the effect of computation on media are the construction of entirely new forms of media, for example the creation of photographic virtual realities out of a number of conventional photographs.

When trying to analyse these kinds of new media we need to make decisions about which modalities should be considered. By far the most significant modalities are text and images the methods in the Systemic Semiotic Web Systems Methodological Framework (described in Chapter 4) have been constrained to aspects of these modalities. Furthermore, these media cannot be considered just in isolation, but how different modalities work together to form additional meanings (as related in Appendix A3, section A3.2.1). Additionally, the examination of protracted stretches of text on the interface, as many sites have simply been translated, and not necessarily that well, from Arabic to English. Sometimes web sites have been developed in English speaking countries particularly the US and so both English and the

Arabic texts are often of good quality has been avoided. The point here, is that the tristratal nature of language makes translation possible. Images are bistratal and so direct translations between images are not possible - there is no way to do this as an automatic conversion for example, although someone familiar with say American and Arabic culture (2nd generation Arab living in America) may find a potential substitute for an image that might for example be inappropriate on a website. Methods in the Systemic Semiotic Web System Methodological Framework relating to modalities on web pages consisted of situational context (field and tenor relations only) to identify the semantics of page layout, image analysis, and image-text analysis. How these are used to interpret or read a web page will be described in the next subsection.

6.2.3 Reading the Web: Communication Perspectives on Using Web systems

When we 'read' web content we apply those reading conventions associated with our language and our culture in order to understand whether the site is meaningful and useful to us. Those who are the intended or unintended recipients of these messages must necessarily utilise a knowledge or appreciation of the situational context in order to unpack or make sense of any message, but there are many other semiotic resources that we draw upon to make sense of the web systems we use. How a global, but not necessarily unified, understanding of a web page is formed in the mind of its reader by describing how each of the methods in the Systemic Semiotic Methodological Framework contributes to the developing interpretation is briefly described.

Situational Contexts: To make sense of a web page an understanding of situational contexts as they are displayed in the many different components of the webpage is applied. The page

is interpreted from the perspective of social actions and activities (field), and also by examining the arrangements of participants presented to us (tenor). We look for coherence in the fields and tenors presented to us. Does the topic of interest consistently specify a tightly constrained set of issues, for example insurance customers, or does it provide other messages about belonging to family and country, or reinforce messages about cultural or national identity? How typical is it to see consistent messages about social actions or activities, or is our normal expectation for us to expect a variety or spread of these across a webpage? We similarly look for coherence in tenor relations as well, are they related or unrelated to the activities identified in a field analysis?

Compositional Attributes: We interpret the designed arrangement of a web page by means of compositional attributes, like salience and its complement balancing centre, that are associated with components on a web page. The design of the web page will also involve lines of interest or vectors. Vectors assist readers of web pages by threading the reader through the elements of page layout and thereby literally establishing reading paths or preferred ways of ordering components and media for the reader across the web page. These compositional attributes can also be directly applied to images.

Compositional Axes: Both Arabic and English speaking observers of web pages and images assign similar meanings to the vertical location of elements within images and across web pages. More practical, every day or 'grounded' items are typically read at the bottom of an image or web page, while more abstract, pure or 'celestial' meanings are often associated with image elements or web components at the top of an image. Both cultures appear to share deeply ingrained reading practices for compositional axes that are possibly informed through their respective Judaeo-Christian and Islamic religious institutions. The horizontal axis both

in web pages and images is often associated with information structure, what can be given as known, what can then be said that is new. Arabic speakers read text right to left and expect new information on the right hand side of a page. English speakers read from left to right. This means that information resources are deployed according to the directionality of the language, and as a consequence what will be looked at first what will be considered as having the highest salience. All of the Arabic websites analysed in this thesis were analysed using the English site for convenience. However, on occasion directionality issues in play are evident. Normally an English language site has a vertical navigation bar on the left hand side (first find then read), but the English language version of Alrajhi Bank Home page has the main navigation bar on the right hand side of the screen (see Figure A3.6.1). This is not consistent as the subsequent Accounts page flips the vertical navigation bar to the left hand side of the screen. All other Saudi sites conform to the usual placement of navigation in their English sites. The fact that directionality effected navigation location on one site has probably more to do with Saudi web developers using professional development environments that support 'directional toggling' rather than any other reason. The Alrajhi Bank pages probably reflect hand coding of one of the pages.

Images: A systemic semiotic approach has the potential for unpacking how we read messages of any kind including those associated with images (see section 4.5). We can examine images as we do web pages from the perspective of compositional attributes and axes. What is salient in this image? Where are the vectors of interest and do they form a preferred reading path? (Refer to subsection 4.33). Is there a significant vertical or horizontal organisation in a specific image? (Refer to subsection 4.74). But images can also be analysed using mood to discover demands or offers within them, by unpacking the inherent subjectivity/objectivity of images to reveal involvement and power, explored through social distance to identify

intimate/personal spaces as distinct from social and public ones, or understood in terms of reality or unreality through the semantic resource of modality.

Image-Text: It is not simply sufficient to look at media in isolation and apply discreet analyses to different modalities. We also need to look at the semantic ties that bind different media. This is particularly the case with texts and images when they co-occur. The co-occurrence is usually delimited at the component level. When images and texts are associated together they can reinforce each other's meanings or making a single message more emphatic. Alternatively, we might imagine a situation where the messages of two related modalities might contradict each other. More often a text message is not equivalent to its related image and there we see complex alternative meanings becoming available for readers to construe from their particular position (Refer to section 4.6).

The Systemic Semiotic Web Systems Methodological Framework also enables us to explore the obvious text-image relations between multimodal media. By examining concurrence, we can see if there is equivalence between the semantics of each modality within a multimodal component. Complementarity can be used to consider whether, and in what way, constituent media are the complementary to each, perhaps by augmentation when an image, for example, extends/adds new means to text, of by divergence where the meaning associated with text and image differs. Texts and images may enhance their respective meanings by providing some kind of additional meanings associated with space, time, cause and so on (refer to section 4.6.3).

6.2.4 Writing the Web: Communication Perspectives on Developing Web Systems

Web systems and web pages associate different kinds of media together, sometimes these are conscious design choices to put this image with this word or text, but most often it is our respective cultures that determine what counts as good design. A Systemic Semiotic Web Systems Methodological Framework can also be applied to analysing websites and web pages but also to design, construct or 'write' these systems. Those individuals or institutions that create messages must necessarily utilise these situational and cultural contexts to do so. This obviously involves a knowledge of Situational Contexts including the social actions and activities that are to be described, what the potential customers are doing (for example, the individual bank customer wanting to get a loan), but also how particular interactants relate to each other (the individual bank customer and the bank manager responsible for organising a loan). Developers must target messages for unintended as well as intended recipients. Unintended recipients should be made well aware of the purpose of the site so that they can decide whether to remain or not.

Designing a web system also involves an often implicit understanding about the arrangement of elements on a screen so that they may be read correctly these will include compositional attributes like salience, balance and balancing centre, or the vectors or lines of interest between components, and the reading paths that an Arabic or English reader may trace around the screen in order to understand the totality of the page design and to facilitate a comprehension of its content. The content is often assisted by specific design in the form of framing, whether this is a result of artful design or a consequence of the application of a predefined style sheet (see section 4.3.3).

In the domain of business processes and services where a systemic semiotic framework has

also been developed, it was noted that analysis and design were complements to each other (Clarke, 2000). It was observed that communication theories appeared to possess an unusual feature that they could be applied to both analysis and design. This has been demonstrated with other communication theories; for example the application of Speech Act Theory to information systems analysis and design (Ågerfalk, 2003). Often it seems that the difference between analysis and design using communication methods is the order of traversal of the methods. When we would read a web page we look at its components from the perspective of the web page and then move to reading the constituent media or text-image relations within it. But if we were designing a new web page this order would be reversed. We might first try to identify the types of meanings we want to provide to a reader, moving from small components, say images or text image relations, up to the overall composition of the page.

6.2.5 Towards a Culturally Appropriate Web Systems Development Practices

The consequence of the development of this framework is that we need not simply rely on individuals who may be familiar with two cultures to be available to web developers to implement a culturally relevant localised website. The numbers of developers who are fluent in Saudi and English cultures are small compared to the number of websites that can or should be built. Those that are fluent in both cultures may not necessarily be the best people to develop an eBusiness site in any case. If we can develop a better set of practices concerning how culture related to websites, then we will not need to have bi-cultural developers. We could in fact, assist any developers regardless of their culture to create culturally relevant localised websites. The framework developed in Chapter 4, opens up this possibility by developing purposeful and deliberate cultural reading practices that can be applied to pages and navigation that constitutes eBusiness sites. Such guidelines would not be

based on a ‘stop list’ of things to do and don’t do when developing global websites, but rather on a fully theorised methodology that utilises a theory of communication in culture to understand web systems development as cultural practices from a semantic perspective. This is needed because whenever there is multiple media there is a multitude of possible messages.

6.3 Contributions and Limitations of the Study

The contributions of this thesis are theoretical, methodological and substantive and are described in subsections 6.3.1, 6.3.2 and 6.3.3 respectively. Limitations of this study are provided in Section 6.3.5.

6.3.1 Theoretical Contributions

This thesis has provided a number of theoretical contributions specifically related to, the identification of requirements for an appropriate theorisation of cultural differences in web systems (T1), the specification of a novel class of theorisation for accessing cultural differences on the web (T2), establishing the need for approaches that support multiple contexts of culture of culture and situation (T3), and finally identifying which modalities provide the best opportunity for identifying cultural differences on the web (T4). The theoretical contributions are elaborated more fully, in Table 6.2.

Table 6.2: Theoretical Contributions

T1	Appropriate theorisation of cultural differences in web systems: establishing the requirements for a suitable theory of cultural differences in web technologies primarily by rejecting transmission models of communication and substituting them with principles of communication from cultural studies and semiotics
T2	Specifying a novel class of theorisation that can be used to assess cultural differences on web sites-semantic form of communication analysis using systemic semiotics that provides an alternative form of cultural analysis than is available in the marketing literature
T3	Multiple contexts: recognising that 'context' in web systems relates to both a situational as well as a cultural context; this is the extension of the Malinowski's thesis to web technologies
T4	Identifying/selecting modalities for determining cultural differences in web system: From first principles written language is tri-stratal and can be translated whereas all other media is bi-stratal and cannot be translated. Therefore the search for cultural differences proceeds from an analysis of non-language media

6.3.2 Methodological Contributions

There are a large number of methodological contributions due to the fact that we are dealing with methods based on a theory that has not previously been applied to the marketing discipline let alone this domain of eBusiness websites. The methodological contributions include the identification of a new unit of analysis (M1), identifying and mapping semantic methods to particular web resources (M2), as well as the creation of a systemic semiotic framework to contain a selection of relevant methods (M3). There are also a range of methodological developments related to web page level analysis. There has been a need to reduce the methods that are applied when determining the situational context (M4), to modify and then extend methods developed for text analysis to other media modalities (M5 and M6), the application in one case of an analysis technique developed for print media being applied to web pages (M7) and the modification as well as the application of a technique developed for print to web pages in another case (M8). There are also several methodological contributions associated with the navigation systems of web sites as distinct from web page analysis. System networks were used to document global navigation on websites (M10) and the need to compare system networks to each other led to new methods for doing so (M11).

The methodological contributions are elaborated more fully, in Table 6.3.

Table 6.3: Methodological Contributions

M1	Unit of Analysis: selection of the 'text' or more specifically the 'multimodal text' as the semiotic unit of analysis that can be applied to any web-based technologies (not just web sites but also social media, refer to subsection 8.2.2)
M2	Identification/mapping of methods to specific web resources: identification of discreet methods to be mapped to specific resources that could help identify cultural differences on the web (follows from T1)
M3	Development of a Web Systems Methodological Framework involving a selection and organisation of relevant methods into an appropriate framework for application with web systems (follows from M2). Methods are first deployed bottom-up and evaluated together later. This is reflected in the chapter structure Chapters 5 and 6 then 7.
M4	Redaction of Situational Context Methods: To be able to use situational context methods on web pages one of the typical methods (mode) needed to be removed as we are not dealing with differences associated with speech or writing. The two methods that remain are field and tenor.
M5	Modification/Extension of Field*:* In multimodal texts (web pages), social actions and activities should also be inferred from non-language media as well as derived from language (the origins of the method). For a multimodal text, fields is spatialised and distributed around the page and as a consequence can be thought of as isomorphic (simple or uniform) or anisomorphic (complex or non-uniform).
M6	Modification/Extension of Tenor: In multimodal texts (web pages), participants and participant relationships should also be inferred from non-language media as well as derived from language (the origins of the method). For a multimodal text, tenor is spatialised and distributed around the page and as a consequence can be single or multiple.
M7	Application of Compositional Semantics to Webpage Layout: Traditional web analysis relies on structural aspects of composition, but the Web Systems Methodological Framework provides support for compositional semantic analysis page layout using compositional attributes and axes.
M8	Application of Image Analysis techniques to multimodal texts (web pages): Images were analysed using compositional semantics but also by means of specific image relevant semantic content relations that include mood, subjectivity/objectivity, social distance and modality.
M9	Modification/Application of Image-Text Analysis to multimodal texts (web pages): image-text semantic analysis was applied to web page content using concurrence, complementarity and enhancement-collectively referred to as expansion. But another related subsystem (projection) was omitted from the analysis because it is theoretically underdeveloped.
M10	Application of System Networks to describe Navigation Systems: System networks can be utilised to describe any type of navigation system (local as well as global) because the latter can be used to describe superordinal taxonomies. Global navigation is a form of superordinal content classification. In this thesis only global navigation has been explored.
M11	Development of methods for comparing system networks: Commutation Test and the development of dynamic operations for factoring sub-networks called specialisation and clustering sub-networks called generalisation.

6.3.3 Substantive Contributions

Substantive contributions are arranged according to the methods that produced the recognition of them. These include compositional semantics (including both salience and balancing centre) as well as vectors and reading paths, situational context (both field and tenor), content organising schemes, image analysis, image-text relations and Global navigation.

There is ample evidence suggesting cultural differences between Australian and Saudi Arabian websites. Primarily these cultural differences are identified through an analysis of situational context as well as by image analysis.

Table 6.4: Substantive Contributions

Compositional Semantics (7.2)	
S1	large dominant Australian companies can and do break salience and balancing centre rules because they can reliably depend of brand recognition, Saudi Arabian websites hardly ever break these rules
S2	considerable variability in the use of vectors and reading paths across sectors and between countries- in general circular reading paths are used when the services are more abstract in nature (eg telecommunications); less so with information provision sites where regular reading paths are used. There is a greater variability exhibited in Saudi Arabian sites than Australian ones
Situational Context: Field and Tenor (7.3)	
S3	Australian website exhibit strongly isomorphic field and single tenor while Saudi Arabian website exhibit the exact opposite
S4	specific cultural patterns of representation of participants (gender, adult and children) in image media
Content Organisation Schemes (7.4)	
S5	organising schemes are strongly influenced by field and in particular with the most popular content organising schemes being ambiguous task-oriented
S6	greater variety of organising schemes in Saudi Arabian sites than Australian web pages
Image Analysis (7.5)	
S7	offers are more evident than demands in both Australian and Saudi Arabian web pages
S8	appears to be a mix of both involvement and engagement for both Australian and Saudi Arabian web pages
S9	strong preferences for non-intimidating low angle shots (low power) in both Australian and Saudi Arabian web pages
S10	noticeable preference for medium shots in Saudi web images- possibly because of the preference for group and family shots
S11	Australian web pages use a variety of shots both intimate close ups and medium shots
S12	Australian web pages have a strong preference for real modalities, this is disrupted for telecommunications category firms that are noticeable different. In contrast Saudi Arabian web pages use real modality for telecommunications
S13	there are numerous overt cultural differences in Saudi Arabian websites that are totally absent from Australian websites (nationality, customs and traditions, dress codes, direct religious references)
Image-Text Relations	
S14	Australian web pages relate text and image together using semantic resource of augmentation and to a lesser extent exemplification
S15	Saudi Arabian web pages use a spread of text-image relation semantics to glue text to image on webpages
Navigation	
S16	There is a large degree of variability in navigation structures are within categories and between countries
S17	with exceptions in both Australian and Saudi Arabia corpora, most global navigation does not appear to well serve either its customers and business functions

6.3.4 Limitations of the Study

A limited number of websites - 20 for Australia and 20 for Saudi Arabia in six business categories have been studied. Clearly there is a need for comprehensive surveys within category and across nations. While the methods are sound, the analysis is detailed, lengthy, manual and error prone.

Automation is desperately needed in order to scale these methods for application to truly large and comprehensive studies. These limitations are discussed at the end of the chapter in Future Research.

Specific methods need further exploration. For example, the vectors that link salient to less salient elements of the page design must in some way be sensibly related to the reading practices of users encountering web pages, but the opportunity to explore this aspect of the study was not possible.

As previously mentioned in subsection 6.2.1, the websites considered here could not be analysed using genre theory as it has not been adequately extended to consider any other modality other than language. However, this problem has been reduced in severity from a theoretical perspective because in Systemic Semiotics the situational context is defined in relation to cultural context, as described in section 3.5 and illustrated in Figure 3.4. As there is considerable organisation at the level of situational context on web pages both in the Australian and Saudi Arabian corpora it is safe to say that generic organisation will also be strongly evident as well. In order to account for content organisation, Content Organising Schemes methods suggested by Rosenfeld and Morville (1989) as described in subsection 4.2.2, and diagrammed in Figure 4.1 (Methods 2 Content Organisation), have been selected.

To see how this issue may be addressed in the future, the reader is directed to section 6.4.6.

6.4 Future Research

In Chapter 4, a set of methods that were adequate to the task of determining the structure and semantics of a range of Australian and Saudi web sites and to identify some cultural differences between them were derived. This approach can be improved upon by extending this semantic analysis in several directions. New methods that would enable the consideration of other types of websites, develop more nuanced approaches to the semantic analyses, and create more streamlined practices can be included. In subsections 6.6.1 through to 6.6.3 inclusive, the thesis suggested method improvements and efficiencies with the assistance of technologies. In subsections 6.6.4 through to 6.6.5 inclusive, the thesis suggests that in order to support larger studies in the future, computer support for website discovery, research and sharing should be considered along with automated website copying.

6.4.1 *Supporting Website Discover, Research and Sharing*

As described in Appendix 1 and elsewhere in this thesis, the Saudi websites that were examined were based on those available from a study on e-Commerce Adoption by Al-Otaibi and Al-Zahrani (2003). These sites were then organised into established Australian Bureau of Statistics business sector categories. To create the Australian sample, the same number of websites was found in the identical business sector categories. Therefore, the research of Al-Otaibi and Al-Zahrani (2003) did effectively select the websites that were analysed in this thesis. But in order to scale up this study to include not just Saudi websites but websites from other Middle Eastern countries or indeed other countries, a better way of discovering, collating, organising and sharing information about websites of interest is required. The

power of the Web can be harnessed for this as well. One class of web-based tools called *social bookmarking* tools enables the gathering and sharing of site location information (see Figure A3.1 [1]). The sites and resources they contain are not shared but only the hyperlink references to them. Bookmarks can have descriptions or commentaries added to them. They may be rated to indicating whether the resource is a 'favourite'. They might be allocated to one or more categories and/or folders, or tagged. Tagging can also be a collaborative process in which case it is also referred to as *social tagging*. Various social bookmarking systems support making these collections of bookmarks completely open and available to the public, shared amongst a specified list of users, or made completely private. The bookmarks themselves can be viewed chronologically, by category or tags. An advantage of these tools is that many people can contribute URLs to a social bookmarking site - a phenomenon known as *crowd sourcing*. With crowd sourcing it would be possible to develop a comprehensive list of corporate URLs - a useful approach in those countries which do not commonly use the web for business. This type of technology could help in developing a group of researchers interested in this and related kinds of website analysis. There are a large number of these tools - some are 'light weight' including for example, Blinklist (http://blinklist.com/), Delicious (http://delicious.com/), StumbleUpon (http://www.stumbleupon.com/), and Reddit (http://www.reddit.com/). Others tools are 'heavyweight' extending this idea into full-blown web-based content citation and management of information about each site, for example zotero (https://www.zotero.org/). Using a tool like zotero would enable other information to be added to these collections including, for example, stock exchange information - like that provided from the Saudi Arabian stock exchange monopoly Tadawul (http://www.tadawul.com.sa), reports on the company perhaps sourced from the website itself, and so forth. These types of research tools would support more detailed research about these companies.

6.4.2 Standardised Corporate Descriptions

It is surprisingly difficult to create consistent descriptions about collections of companies in different sectors. Some of the information we would seek to acquire concerns organisational structure and management (How many workers? How old is the company? Who are the directors?). Other information concerns financial accounting and economics of the company. Part of the issue involves finding information sources that can be used. This study was confined to information that could be determined from the website itself. But another part of the issue relates to the consistent reporting of these details. While a lack of corporate information cannot be easily solved, one thing that can be done is the analysis and design of a standard template for recording and presenting organisational information (see Figure A3.1 [2]). Once the design of such a form has been finalised, it can be easily implemented in Acrobat and distributed by email for members of the research team to complete. The information in the form can be subsequently consolidated on a server and used for analysis to create secondary results about the research (see Steward 2004), for example, the percentage of small medium enterprises versus large companies and so on.

6.4.3 From Manual Web Page Copying to Automated Website Cloning

One aspect to this problem is to know when a web page or website has changed. The difficulties associated with this include the fact that the changes to a website might range from the minor to the extensive and also that pages vary in their degree of complexity. This problem is faced by content aggregators who want to grab or *scrap* content from a large number of arbitrarily complex web pages and web sites. The approach used to solving this problem is to develop software that effectively learns the content structure of each relevant page. The software describes each page using a *template* and then uses it to guide the

software to those parts of the page where content should be scrapped. If the template has changed between subsequent visits, then the structure of the web page has changed and the software will create a new template for the page (see Figure A3.1 [3]). While the technical details of how this can be achieved are beyond the scope of this thesis, the important fact is that this is a technically solved problem. The reader is directed at an excellent but necessarily technical discussion by Hemenway and Calishain (2003) which includes implementation examples.

The other aspect of addressing website change and disappearance is through the development a local archive of all the resources associated with web sites of interest (see Figure A3.1 [4]). Even within the time it has taken to complete this thesis, several (Saudi Arabian) sites have disappeared and this makes it difficult, if not impossible, to revisit sites and recopy pages if needed. While The Waybackmachine is growing and is being financially supported, non-English language sites are still not well represented on the archive. Also the churn in Saudi websites means that the chances of being archived are reduced.

While the size of this study has meant that manually selecting, copying and pasting pages has been sufficient for our analysis needs, larger and more comprehensive studies will require that entire websites and all of their associated resources be copied and secured so that even if they disappear from the WWW they can still be studied offline. The analysis of websites developed here has been highly selective, almost exclusively related to home pages, but if more exhaustive studies are to be undertaken then all the pages and associated resources, hyperlinks and so on, must be grabbed. Thankfully there is a venerable and stable open source application called HTTrack (http://www.httrack.com/) that is an excellent tool for imaging, mirroring or *cloning websites*. The links and all of the attached resources are

preserved so that the cloned websites function off-line as if they were being viewed online. The type of tools previously described in subsection 6.8.4 for discovering, researching and sharing websites could be used to instruct HTTrack about which websites to locally archive.

6.4.4 Page Layout Method Improvements and Automation

For each of the companies examined in the Saudi and Australian eBusiness cohorts a Page Design and a Page Wireframe was provided. Together, these sections were intended to reveal the Page Layout for the Home page - the most extensively designed and costly content page for a website - by respectively (i) illustrating the page with a screen capture of the page with a brief discussion of its visual organisation and (ii) to show the logical organisation of this web page in terms of identifiable components or regions. There are three improvements that could be made in relation to this method - the automation of web page layout description, computation of how regions relate to each other, and the development of tools that can visualise page layout as distinct from page content. These will be described in turn below.

A web page contains information about its content and structure. As was discussed in subsection 6.8.3, there has been a considerable amount of literature on content scrapping of web sites. The most common approach to extracting web content using tools is to analyse the HTML structure and the HTML tags that form the web pages converting them into a computation representation called a Document Object Model (DOM) which can then be analysed using computer programs that perform the context extraction directly. Fu et al. (2010) describe an approach to context extraction based on the *Vision-based Page Segmentation* or VIPS algorithm (Deng et al., 2003) that attempts to improve on the performance of the content extraction by simulating the process by which a user unconsciously divides the webpage into several screen regions. In this way the extraction

process is aided because the algorithm understands the web page layout. The VIPS algorithm could be used to extract and represent the page layout in terms of regions similar to that found in the wireframe descriptions provided in Appendix A1 and A3 (see Figure A3.1 [5]).

Wireframe analysis can be improved if we can actually identify which regions on the web page belong to each other. When we analysed the websites in Appendix A1 and A3 the identification of which regions related to each other on the page was left unspecified - we directly moved to considering organising schemes. But one could calculate the adjacency between regions identified in the application of the VIPS algorithm to web pages using so-called *contiguity analysis* which is extensively used within spatial analysis community (Lebart, 2000). The purpose of contiguity analysis is to find which regions border with each other as those that do are likely to be acting as containers for the same kind of content (see Figure A3.1 [6]). There are many examples of this in Appendix A1 and A3. Basically, every time we deal with sets of text-image relations for these web pages we are dealing with regions that have similar content reflecting as they do the overall page design. Both the VIPS algorithm and contiguity analysis are known solutions although in the case of contiguity analysis the application of it to web page layout would represent a novel application of it.

The final improvement to the Page Layout Methods is to provide the ability to graphically render each web page according to the region information identified in the Page Layout Visual Segmentation Algorithm (VIPS), the previously determined region contiguity analysis, and the media contained within each region. This so-called *Page Layout Visualisation* would form a kind of computationally determined augmented wireframe; see Figure 6.1 [7].

6.4.5 Tool Support for Image Composition

Complementing the structural aspects of web page design, wireframes and components in our comparative analysis of Australian and Saudi websites was the novel application to websites of an image composition method developed by Kress and van Leeuwen (1990:94-98). This was applied to the home page design as well as the main banner image of the selected websites in our study. The image composition method explores the semantics of images along a number of dimensions including salience, balancing centre, vectors, reading paths, framing and perspective, see subsections 4.3.3 and 4.3.4. There are several possible ways of providing tool support for image composition. It is possible that a program based on visual heuristics or perhaps statistical analysis of web pages could be used to identify frames (associated with the semantic analysis of web page regions), balance, balancing centres and salience. Although perspective was a technique not employed on web pages in this thesis, we could imagine a program that could be developed to allow a user to superimpose and manipulate a perspective grid over an image, assisting in the documentation of this aspect of images where present. Similarly a tool for documenting vectors and reading paths could be developed.

A promising study that could be undertaken would be to see whether and in what ways the vectors and reading paths identified in a systemic analysis web page might relate to how users actually read these web pages. Eye tracking technologies and methodologies have been developed for studying actual attention, gaze and movement across interfaces and web pages (Nielsen and Pernice, 2010; Pernice and Nielsen, 2009). Employing eye tracking systems to study real user engagement with websites might show for example that the cultural conventions used to develop web pages (vectors and reading paths) are in fact utilised by actual readers of those sites. The results would be interesting even if this was not the case.

6.4.6 Genres on Web pages - Semantic method supporting Organising Schemes

A method that was applied to the homepages and occasionally additional pages of the Australian and Saudi websites was the idea of an organising scheme. As has been previously discussed, this is based on information theoretic organisation of web content in terms of exact and ambiguous organising classifications of content. One improvement that could be made is the development of a semantic approach to the local organisation of media on the web page. Systemics describes the category of genre - used to describe the overall rhetorical pattern of a text. For example, a memo has a certain structural organisation to it that distinguishes it from other written texts - From and To fields, a Date and a Body section are generally required elements of this genre. Genre has been successfully applied to looking at other less usual texts in particular the spoken and written language associated with work practices conducted manually or with the support of information systems (see Clarke, 1992, 2000, 2001a, 2001b). But the addition of multimodality and the spatialisation of these elements around the screen means that a comprehensive visual genre theory has not yet been developed. Most efforts for describing, automatically identifying and processing of web genres have been in the natural language processing and computational linguistics disciplines and have been limited to considering hypertexts and avoiding media like web pages that possess multimodality (see examples in Mehler et al. (eds) 2010). Future research work needs to concentrate on developing an appropriate genre description of use for considering multimodal web genres. A possible point of departure for this work is Martin (1994) whose development of the category of macro genres (a super class of genre) would appear to be a promising direction. It is also likely that text-image relations will also benefit the development of a new semantic method to augment organising schemes. Having Genre Organising Schemes would enable for example the stages of an e-Commerce purchase to be modelled as a pattern of communication between the company and customer.

6.4.7 *Navigation Method Improvements and Automation*

In Chapter 4, navigation systems as systems of content classification and used the concept of a system network to document the structure of website global navigation were discussed. The key point of interest here is that a system network is a semantic structure. In Chapter 5 system networks of a large number of Australian and Saudi websites (20 each in 6 sectors) are documented. In Chapter 5, an informal comparison and contrast was conducted to identify similarities differences between these different websites developed to support different business in different cultures. To identify the degree of similarity in the structure of the global navigation of say one energy company in Saudi Arabia to one in Australia, or to be able to identify any differences if present in the navigation structure of an Australian bank and one in Saudi Arabia, requires the ability to compare and contrast concept labels in the navigation systems. How similar is for example “payment” and “purchase” in the context of particular business websites? In this thesis such comparisons in structure were performed manually and the similarities and differences between the meanings of navigational labels involved considerable interpretation. Therefore, improvements could be made to the existing Navigation using System Networks method. Conceivably, this would involve the development of four separate sets of computational routines, each will be discussed in turn.

The first improvement in the Navigation using System Networks method is the direct extraction of global navigation terms from web pages. This process must be supervised because as can be seen from exploring the Saudi and Western websites, not all sites are consistent in their use of global navigation terms and layout. The extraction of terms can be performed using scrapping, as previously described in subsection 6.8.3, and relatively mature computing methodologies and tools are available for achieving this.

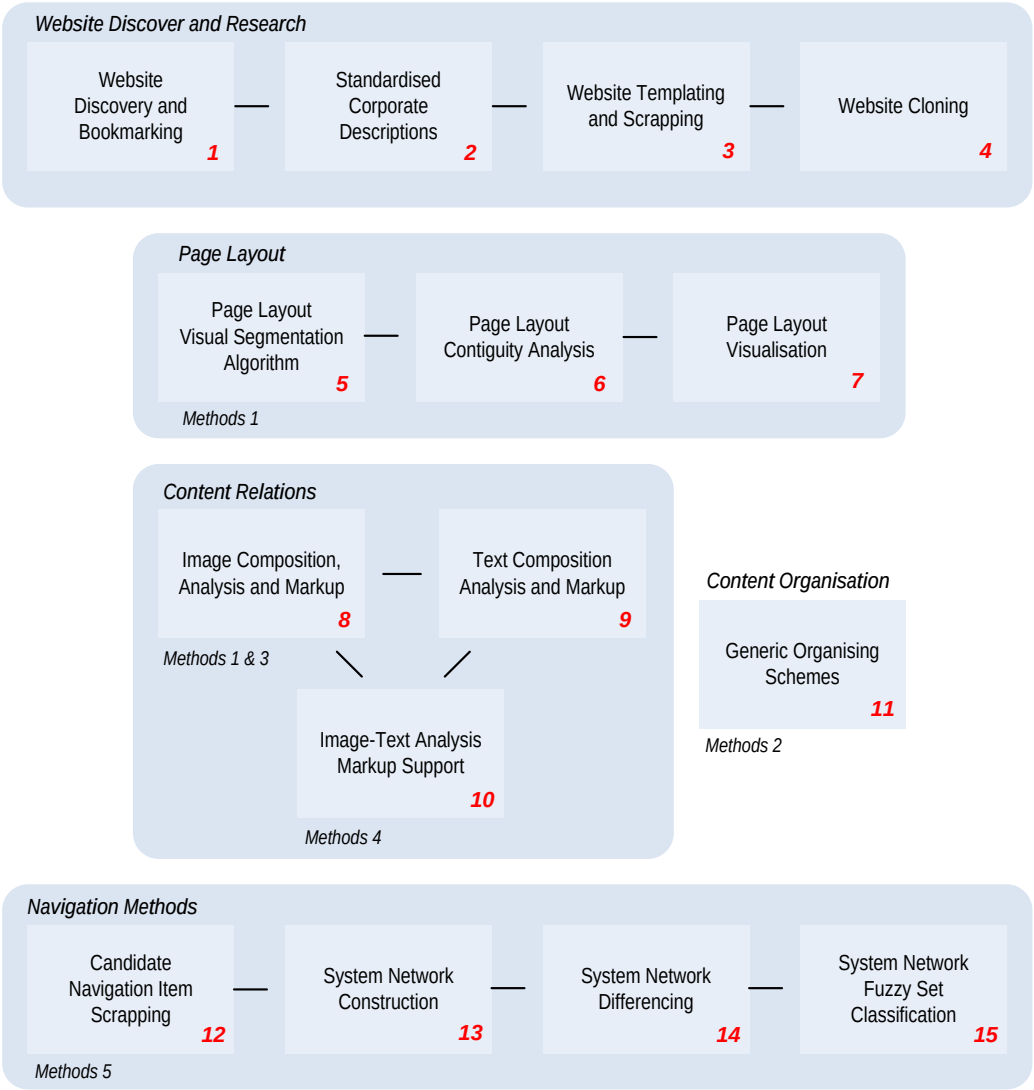
The second improvement to the Navigation using System Networks method is *the transformation of extracted navigation labels into a system network*. Drawing website navigation systems is a laborious and inexact manual process. Utilities for drawing system networks are available. Two examples are Systemic Coder by Mick O'Donnell (2011) and SysGraph developed by the Macquarie Systemic Modelling Group (2011), at Macquarie University in Australia. Unfortunately neither of these can be used in website studies because they assume that the network is being developed from language texts, neither handle multimodal information, and also neither are open to modification. However, the existence of these tools means that we might envisage the development of a systemic network coder for use with multimodal texts like websites. Routines could then automatically generate appropriate system networks of website navigation once these have identified.

The third improvement to this method involves the ability to be able to compare pairs of system networks for similarities and differences. To do this, would require the development of computer routines that can 'walk through' these networks determining whether the networks are equivalent or identical. This type of problem is often referred to as 'differencing' or sometimes also known as the 'versioning problem', and so what would need to be developed are *computational routines that could determine system network differencing*. This would be a useful feature for quickly comparing the navigation systems of different websites within the same kind of business, different kinds of businesses, and/or within a culture or across different cultures, work that was manually performed in the second half of Chapter 5. It would also be applicable when examining changes to websites over time. It is not commonly known in Marketing that the World Wide Web is itself being archived on the Web. Called TheWaybackMachine (http://www.archive.org/) this archive allows distinct

versions of the site to be viewed through time- literally enabling users to ‘view the web as it used to be’. So for those sites that are archived (predominately large institutional Western sites) the development of system network differencing routines, used in conjunction with the Wayback Machine, would enable longitudinal studies to be conducted in the development and long term change of websites.

A final improvement that needs to be implemented for the navigation method using system networks is the ability to code parts of the system networks with labels that might generalise multiple navigation labels within or across system networks. To repeat a previous example, we may find labels “payment” and “purchase” in two distinct websites. The similarity in meaning of these labels might be generalised using the label “transaction”. There are potentially a number of different ways of being able to support synonyms in system networks. Open source systems like WordNet can be incorporated into the workflow and can provide this kind of dictionary based features. Another potentially interesting is the use of “fuzzy sets”- a classification technique usually associated with engineering but which has been applied in exactly these kinds of social science classification problems by Smithson (2006). An earlier work by Smithson (1986) provided programs for computing fuzzy metrics of similarity and difference. Again, while this is a technical issue, it is a solved one.

Figure 6.1: Modified Systemic Semiotic Web Analysis Framework



6.4.8 *New Studies*

Several other studies should be undertaken to assist in developing the methods and in order to expand our understanding of cultural diversity and difference in web systems. The study of Australian websites listed on the Australian Stock Exchange (ASX), could be extended. Only six of the Australian company considered here are listed on the ASX; these included the Commonwealth Bank, NAB, ANZ, TPG, Telstra and AGL. The advantage of studying

publically listed companies is that they are generally persistent and there is also more information publically available about the companies.

It could also be possible to extend the Anglophone corpus to include North American companies. Nielson and Tahir (2001) published a book consisting of conventional usability studies of the home pages of fifty American corporate websites selected by the presence on the Fortune 500 list, or because they are high traffic sites or prominent e-commerce sites. The kind of systemic semiotic analysis developed here could be contrasted against these more traditional usability studies with a view to testing the utility of the methods developed here and perhaps also to see if the traditional methods or workflow can be augmented with systemic methods.

Another interesting study would be to extend the Arabic corpus to include companies in the Gulf States. In this dissertation, the home pages of only about 12% of the 144 companies listed on the Saudi Stock Exchange (Tadawal), were studied. The Alahli Bank (NCB), Advanced Electronic Company (AEC), Atheer, Nesma, Naseej, Awal Net and Alfursan Travel are not listed companies. The depth of our study could be extended by examining many more Saudi sites that are listing on the Tadawal as well as examining companies listed in other stock exchanges in the region (see Table 6.5).

Table 6.5: Stock Exchanges in the Arabic and Gulf States

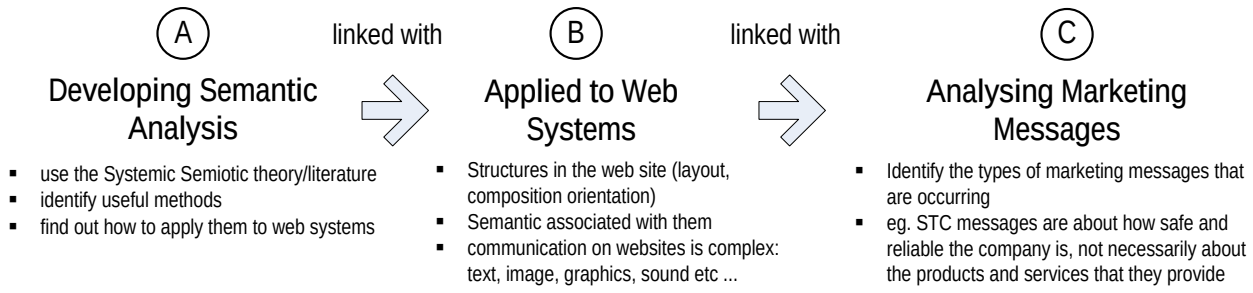
State	Stock Exchange	Abbrev.	Listed Companies
Abu Dhabi	Abu Dhabi Securities Exchange	ADX	66
Bahrain	Bahrain Stock Exchange	BSX	47
Dubai	Dubai Financial Market	DFM	62
Kuwait	Kuwait Stock Exchange	KSE	231
Muscat	Muscat Securities Market	MSM	122
Qatar	Qatar Exchange	QE	43

Further into the future, would be the development of truly international comparative studies employing teams of experts from around the world to assist in selecting and researching companies of interest. Future research might consider the many different cultures within Asia and assess how meanings are deployed in websites in Scandinavia. This could complement the wide survey approach with a deeper type of investigation looking at all the new media modalities employed by a selection of companies. This would mean looking at Twitter, Facebook, LinkedIn, and all the other new media that companies can now use and also seeing how this relates to and integrates with their existing web systems.

6.5 Summary

This journey started by first examining the state of play with respect to literature concerning cultural differences. The study was approached as a Saudi Arabian with a degree of bewilderment concerning the received wisdom about cultural differences in the web marketing area (Hofstede 1980; Hall 1976). The relationship between communication, culture and technology advocated ‘cultural awareness’ and ‘cultural sensitivity’ (Zakoria, 2003); a perspective that privileges those who are able to make such judgements and publish them in the Western literature. In reality, while culture is closely connected to information technology design outcomes (Aladwani, 2001; Straub et al., 2001, Clark, 1987; Yeo, 1996), the literature was very specifically geared towards a single received approach that had emerged within the web marketing area (Hofstede, 1980; Hall, 1976). There were clearly issues with it for example, Al-Badi and Mayhew (2010) correctly surmised that web development practices needed to be extended beyond the North American and Western European traditions in order to be able to meet global challenges including coping with cultures outside these regions of the world. The premises upon which this approach was based seemed to be rarely critiqued with some exceptions specifically the work of Hermeking (2006).

Figure 6.2: Developing a Systemic Semiotic Analysis of Marketing Messages in web systems



If anything, new information technologies tend to expand the possible numbers of media and the way they are interconnected. This increased the possibility of making new meanings, but also the need for systemic semiotic web system methodological frameworks of the kind developed here. The same applies as the work of building web systems is increasingly outsourced and off-shored. As business becomes increasingly global, when the cost to business of cultural insult or misunderstanding can have a spectacular effects, and in a time of unprecedented suspicion between at least the Western and Eastern cultures, any concerted effort to understand how cultures organise our language and how our languages constitute ourselves and our cultures, must be explored. The cost of not understanding each other is simply too high.

Bibliography

Aasker, D. A., Kumar, V and Day, G. S. (2001) *Marketing Research* New York: John Wiley and Sons

Ackoff, R. (2010) *Systems Thinking for Curious Managers: With 40 new Management f-LAWS* (with Herbert J. Addison and Andrew Carrey) Devon, UK: Triarchy Press

Adam, S., Mulye, R., Deans, K. and Palihawadana, D. (2002) "E-Marketing in perspective: a three country comparison of business use of the Internet" *Marketing Intelligence and Planning,* Vol.20, No. 4, pp. 243-251

Adham, K. A. and Ahmad, M. (2005) "Adoption of web site and e-commerce technology among Malaysian public companies" *Industrial Management and Data Systems,* Vol. 105**,** pp. 1172-1187

Adler, N. J. (2001) *International Dimensions of Organizational Behavior*, 4th ed., South-Cincinnati, Ohio: Western Publishing

Ågerfalk, P. J. (2003) *Information Systems Actability. Understanding Information Technology as a Tool for Business Action and Communication,* Linköping Studies in Information Science, Dissertation No. 7, UniTryck, Linköping University, Linköping Sweden

Ågerfalk, P. J. (2010) "Getting Pragmatic" *European Journal of Information Systems,* Vol.19, No. 3, pp. 251–256

Ågerfalk, P. J and Eriksson, O. (2004) "Action-oriented conceptual modelling" *European Journal of Information Systems* Vol.13, No. 1, pp. 80–92

Ahmed, A., Zairi, M. and Alwabel, S. (2006) "Global benchmarking for internet and e-commerce applications" *Benchmarking: An International Journal,* Vol.13, pp. 68-80

Aladwani, A. M. (2001) "IT planning effectiveness in a developing country" *Journal of Global Information Management,* Vol. 4, No. 3, pp. 51-65

Al-Ashban, A. and Burney, M. (2001) "Customer adoption of tele-banking technology: the case of Saudi Arabia" *International Journal of Bank Marketing* Vol.19, No. 5, pp. 191-200

Al-Badi, Ali & Mayhew, Pam.J 2010, 'A Framework for Designing Usable Localised Business Websites' *Communications of the IBIMA 2010,* pp. 1-24

Alexander, C., Ishikawa, S., Silverstein, M., Jacobson, M., Fiksdahl-King, I. and A. Angel (1977) *A Pattern Language. Towns, Buildings, Construction* New York: Oxford University Press

Al-Gahtani, S. (2004) "Computer technology acceptance success factors in Saudi Arabia: an exploratory study" *Journal of Global Information Technology Management,* Vol.7, No. 1, pp. 5-29

Al-Ghaith, W., Sanzogni, L. and Sandhu, K. (2010) "Factors Influencing the Adoption and Usage of Online Services in Saudi Arabia" *The Electronic Journal on Information Systems in Developing Countries,* Vol. 40, No. 1, pp. 1-32

Al-sukkar, A. (2005) "The Application of Information System in the Jordanian Banking Sector: A study of the Acceptance of the Internet" *Department of Information Systems: Unpublished PhD Dissertation* Wollongong, NSW, University of Wollongong.

Aldridge, A., Forcht, K. and Pierson, J. (1997) 'Get Linked or Get Lost: Marketing Strategy for the Internet', *Internet Research,* Vol.7, No. 3, pp. 161-169

Almaney, A. J. and Alwan, A. J. (1982) *Communicating with the Arabs: A Handbook for the Business Executive,* Waveland Press, Prospect Heights, IL

Alvesson, M. and Kärreman, D. (2000) "Taking the linguistic turn in organizational research: challenges, responses, consequences" *The Journal of Applied Behavioral Science,* Vol. 36, No. 2, pp.136-158

Andersen, P. B. (1990) *A Theory of Computer Semiotics: Semiotic Approaches to construction and assessment of computer systems,* Cambridge Series on Human-Computer Interaction, Cambridge: Cambridge University Press

Andersen, P. B, Holmqvist, B. and Jenson, J. (1993) *The computer as medium,* Learning in Doing: Social, Cognitive, and Computational Perspectives Cambridge, UK: Cambridge University Press

Angelides, M. C. (1997) "Implementing the Internet for business: A global marketing opportunity", *International Journal of Information Management,* Vol.17, No. 6, pp. 405-419

Arnheim, R. (1956) *Art and Visual Perception* London: Faber

Arnheim, R. (1982) *The Power of the Center* Berkeley, LA: UCLA Press

Arnold, M. D. (1998) "A review of the essentials of international communication" *Technical Communication,* Vol. 45, No. 2, pp. 197-206.

Austin, J. L (2005) *How to Do Things With Words,* 2nd Edition, Harvard University Press

Baack, D. W and Singh, N. (2007) "Culture and web communications" *Journal of Business Research,* Vol. 60, No. 3, pp. 181-188

Baker, E., Al-Gahtani, S. and Hubona, G. (2007) "The effects of gender and age on new technology implementation in a developing country: Testing the theory of planned behaviour (TPB)" *Information Technology and People,* Vol. 2, No. 4, pp. 352-375

Bakos, Y. (1998) "Towards friction-free markets: the emerging role of electronic marketplaces on the internet" *Communications of the ACM* Vol.41, No. 8, pp. 35-42

Bateman, J. (2008) *Multimodality and Genre: A foundation for the systemic analysis of multimodal documents* London: Palgrave Macmillan

Barber, W. and Badre, A. (1998) "Culturability: The merging of culture and usability. Presented at the Conference on Human Factors and the Web, Basking Ridge, New Jersey: AT&T Labs" Retrieved from http://zing.ncsl.nist.gov/hfweb/att4/proceedings/barber/

Barrett, M. (1997) "Playing the right paradigm" *International Journal of Bank Marketing,* Vol. 29, No. 9, pp. 32-39

Barron, T., Chiang, R. and Storey, V. (1999) "A semiotics framework for information systems classification and development" *Decision Support Systems,* Vol. 25, No. 1, pp.1-17

Bauer, C. and Scharl, A. (2000) "Quantitative evaluation of Web site content and structure" *Internet Research: Electronic Networking Applications and Policy,* Vol.10, No. 1, pp. 31-43

Beech, N. and Cairns, G. (2001) "Coping with change: the contribution of postdichotomous ontologies" *Human Relations* Vol. 54, No. 10, pp. 1303-1325

Berger, P. L. and Luckmann, T. (1966) *The Social Construction of Reality: A Treatise in the Sociology of Knowledge* New York, NY: Doubleday

Berners-Lee, T. (2001) "The semantic web" *Scientific American,* Vol.284, No. 5, pp. 1-10

Berry, J. (1969) "On cross cultural comparability" *International Journal of Psychology,* Vol.4, No. 2, pp. 119-128

Berry, M. (1981a) "Systemic linguistics and discourse analysis: a multi-layered approach to exchange structure" in Coulthard, M. and Montogomery, M. eds/ (1981) *Studies in Discourse Analysis* London: Routledge and Kegan Paul, pp. 120-145

Berry, M. (1981b) "Polarity, ellipticity, elicitation and propositional development, their relevance to the well-formedness of an exchange" *Nottingham Linguistics Circular,* Vol. 10 No.1, pp. 36-63.

Bishop, B. (1997) *Toward Trust and Understanding*, Denver, CO: The Colorado Center for Environmental Management

Bishop, B. (2006) "Theory and practice converge: a proposed set of corporate communication Principles" *Corporate Communications: An International Journal* Vol.11, No. 3, pp. 214 - 231

Boje, D. M. (2001) *Narrative Methods for Organizational and Communication Research* London: Sage Publications

Bond, E. and Fink, R. (2003) "Customer satisfaction and the marketing-quality interface" *Journal of Business and Industrial Marketing* Vol. 18, No. 3, pp. 204-218

Boutros-Ghali, B. (1982) "The foreign policy of Egypt in the post Sadat era" *Foreign Affairs,* Vol. 60, No. 4, pp. 769-788

Boyd, A. (2001) "The five maxims of project satisfaction" *Aslib Proceedings,* Vol. 53, No. 10, pp. 423-430

Boyd, A. (2002) “The goals, questions, indicators, measures (GQIM) approach to the measurement of customer satisfaction with e-commerce Web Sites” *Aslib Proceedings,* Vol.54, No. 3, pp. 177-187

Bradbury, D. (2003) “Unweaving the tangled web of dumb data” *Computer Weekly,* Vol.10, pp. 1-7

Brennan, T. (1992) “Integrating communication theory into media policy: An economic perspective” *Telecommunications Policy,* Vol.15, No. 6, pp. 460-474

Brodie, R., Coviello, N., Brookes, R. and Little, V. (1997) “Towards a paradigm shift in marketing: an examination of current marketing practices” *Journal of Marketing Management,* Vol. 13, No. 5, pp. 383-406

Broekhuizen, T. and Huizingh, E. (2009) “Online purchase determinants Is their effect moderated by direct experience?” *Management Research News,* Vol. 32, No. 5, pp. 440-457

Brooks, F. P. (2002) *The Mythical Man-Month: Essays on Software Engineering* Anniversary Edition (2nd Edition) Addison Wesley

Brooksbank, R. (1996) “The BASIC marketing planning process: a practical framework for the smaller business” *Marketing Intelligence and Planning,* Vol. 14, No. 4, pp. 16-23

Bucy, E., Lang, A., Potter, R. and Grabe, M. (1999) “Formal Features of Cyberspace: Relationships between Web Page Complexity and Site Traffic” *Journal of the American Society for Information Science,* Vol. 50, No. 13, pp. 1246-1256

Burian, R. (2000) “How well do you understand your market's requirements and opportunities” *Strategy and Leadership,* Vol. 28, No. 5, pp. 28

Burton-Jones, A,, Storey, V. and Sugumaran, V. (2005) “A semiotic metrics suite for assessing the quality of ontologies” *Data and Knowledge Engineering* Vol. 55, No. 1, pp. 84-102

Buss, D. M. et al (1990) “International preferences in selecting mates: A study of 37 cultures” *Journal of Cross-Cultural Psychology* Vol. 21, pp. 5-47

Butler, C. S. (2003) *Structure and Function. A Guide to Three Major Structural-Functional Theories Part 1- Approaches to the simplex clause,* Studies in Language Companion Series John Benjamins Pub. Co.

Callaghan, J. and Pie, A. (1998) ‘Business Use of Internet Web sites-Could Do Better!’, *British Telecommunications Engineering* Vol.17, No. 1, pp. 56-65

Campbell, D. (1975) “Degrees of freedom and the case study” *Comparative Political Studies,* Vol 8, No. 1, pp. 178-193

Cavanagh, R. E and Clifford, D. K (1986) *The Winning Performance,* London, Sidgwick and Jackson

Chaffey, D. (2002) *E-Business and E-commerce Management* Prentice Hall

Chan, Y. (1997) 'Demographic and attitudinal differences between active and inactive cardholders the case of Hong Kong', *International Journal of Bank Marketing,* Vol. 15, No. 4, pp. 117-125

Cheney, G. and Dionisopoulos, G. N. (1989) *Public relations? No, relations with publics: a rhetorical organizational approach to contemporary corporate communications* Mawah, NJ, Lawrence Erlbaum Associates

Cho, C. H. and Khang, H. K (2006) "The State of Internet-Related Research in Communications, Marketing and Advertising: 1994-2003" *Journal of Advertising* Vol. 35, No. 3, pp. 143-163

Cho, C., Lee, J. and Tharp, M. (2001) "Different forced exposure levels to banner advertisements" *Journal of Advertising Research,* Vol. 41, No. 4, pp. 45-56

Clark, T. (1990) "International marketing and national character: A review and proposal for an integrative theory" *Journal of Marketing*, Vol. 54, No. 4, pp. 66-79

Clarke, R. J. (1992) "Some Applications of Social Semiotics in Information Systems Discipline and Practice" in MacGregor, R., Clarke, R. J., Little, S., Gould, E. and A. Ang eds/ (1992) *Proc. 3rd Australian Conference in Information Systems ISOP-92* Wollongong, NSW, Australia 5-8 October 1992, Department of Business Systems, University of Wollongong, pp. 67-79

Clarke, R. J. (2000) "An Information System in its Organisational Contexts: A Systemic Semiotic Longitudinal Case Study" *Unpublished PhD Dissertation*, University of Wollongong

Clarke, R. J. (2001a) "Studies in Organisational Semiotics: An Introduction" *Australian Journal of Information Systems* Vol. 8, No. 2, pp. 75-82

Clarke, R. J. (2001b) "From System to Text: Documenting Computer Applications using Genre" *3rd International Conference on Enterprise Information Systems ICEIS 2001*, Setúbal Portugal

Clarke, R. J. (2011) "Semantic Methods for Webpage Analysis" mineo.

Cockburn, C. and Wilson, T. D. (1996) "Business use of the world-wide web" *International Journal of Information Management* Vol.16, No. 2, pp. 83-102

Cohen, F. (2010) *HTTrack Users Guide (3.10)* http://www.httrack.com/html/fcguide.html Retrieved 20 December 2011

Cohen, R. (1987) "Problems of intercultural communication in Egyptian-American diplomatic relations" *International Journal of Intercultural Relations* Vol. 11, No. 1, pp. 29-47

C. a. I. T. (2007) *Internet Usage Report in the Kingdom of Saudi Arabia* Communication and Information Technology Commission, Kingdom of Saudi Arabia

Coombs, W. T. (1999) "Information and Compassion in Crisis Responses: A Test of Their Effects" *Journal of Public Relations Research* Vol. 11, No. 2, pp. 125 – 142

Cooren, F. (2008) 'Between semiotics and pragmatics: Opening language studies to textual agency' *Journal of Pragmatics* Vol. 40, No. 1, pp. 1-16

Coulthard, M. and Brazil, D. (1979) *Exchange Structure,* Discourse Analysis Monograph No.5, Birmingham, University of Birmingham

Coviello, N., Milley, R. and Marcolin, B. (2001) "Understanding IT-enabled interactivity in contemporary marketing" *Journal of Interactive Marketing,* Vol. 15, No. 4, pp. 18-33

Coviello, N. E., Brodie, R. J. and Munro, H. J. (1997) "Understanding contemporary marketing: development of a classification scheme" *Journal of Marketing Management* Vol. 13, No. 6, pp. 501-522

Curtis, N. (2010) *Modular Web Design. Creating Reusable Components for User Experience Design and Documentation* Berkeley: New Riders/Peachpit Press

Davidson, R. (1996) "National Culture, Organisational Forms and Group Support Systems" Kowloon, Hong Kong, City University of Hong Kong Report

Davis, D., Barnes, J. and Jackson, W. (1993) "Integrating Communications Theory, Cognitive Style and Computer Simulation as an aid to research on implementation of operations research" *Computers Ops Res,* Vol. 20, No. 2, pp. 215-225

Day, A. (1997) 'A model for monitoring Web site effectiveness' *Internet Research* Vol. 7, No. 2, pp.109-115

de Joia, A and Stenton, A. (1980) *Terms in Systemic Linguistics: A Guide to Halliday* London: Baytsford Academic and Educational Ltd.

de Mooij, M. (2000) "The future is predictable for international marketers: converging incomes lead to diverging consumer behaviour" *International Marketing Review* Vol. 17, No. 2, pp. 103-113

De, R., Mathew, B. and Abraham, D. (2001) "Critical Construct for Analyzing e-business: investment, user experience and revenue models" *Logistics Information Management,* Vol. 14, No. 1/2, pp. 137-149

de Saussure, F. (1993) *General course in linguistics* Edited by Charles Bally and Albert Sechehaye, New York: McGraw-Hill

Dietz, J. L. G. (1999) 'DEMO: towards a discipline of Organisation Engineering' *European Journal of Operations Research*

Deng, Cai, Shipeng, Yu, Ji-Rong Wen and Wei-Ying Ma (2003) "Extracting Content

Structure from Web Page based on Visual Representation" *APWeb 2003*, pp. 406-417

Denzin, N. K. (1994) *Handbook of qualitative research,* Thousand Oaks, CA: Sage Publications

Deshpande, R. (1983) "'Paradigms Lost': On Theory and Method in Research in Marketing" *Journal of Marketing* Vol. 47, No. 4, Fall, pp. 101

Desmarais, N. (2000) "Body Language, Security and e-commerce" *Library Hi tech* Vol.18, No. 1, pp. 61-74

Dik, S. C. (1997a) *The Theory of Functional Grammar Part I: The Structure of the Clause,* 2nd Revised Edition Functional Grammar Series 20, Berlin: Mouton de Gruyter

Dik, S. C. (1997b) *The Theory of Functional Grammar Part II: Complex and Derived Constructions,* Functional Grammar Series 21, Berlin: Mouton de Gruyter

Dowling, G. (2001) *Creating Corporate Reputations: Identity, Image and Performance,* Oxford University Press, London

Downes, S. (2005) "Semantic networks and social networks" *The Learning Organization,* Vol. 12, No. 5, pp. 411-417

Durgin, J. and Sherif, J. (2008) "The semantic web: a catalyst for future e-business" *Kybernetes* Vol. 37, No. 1, pp. 49-65

Eagleson, R. D., Threadgold, T. and P. C. Collins (1990) *Grammar: Its Nature and Terminology* Melbourne: Australia

Eco, U. (1972) *Semiotic and the philosophy of language* Indiana: Indiana University Press

Eggins, S. (1994) *An Introduction to Systemic Functional Linguistics,* London: Pinter Publishers,

Eggins, S. (2004) *An Introduction to Systemic Functional Linguistics,* 2nd Edition New York: Continuum

Eggins, S. and Slade, D. (1997) *Analysing Casual Conversation* London and Washington: Cassell

Eisenhardt, K. M. (1989) "Building theories from case study research" *Academy of Management Review* Vol. 14, No. 4, pp. 532-550

Elbeltagi, I. (2007) "E-commerce and globalization: an exploratory study of Egypt" *Cross Cultural Management: An International Journal* Vol. 14, No. 3, pp. 196-201

Elving, W. J. L. (2005) "The role of communication in organisational change" *Corporate Communications: An International Journal* Vol. 10, No.2, pp. 129-38

Emory, C. W. and Cooper, D. R. (1991) *Business Research Methods* Homewood, Illinois: Richard D. Irwin

Fairclough, N. (1989) *Language and Power* London: Longman

Fairclough, N. (2005) "Discourse analysis in organization studies: the case for critical realism" *Organization Studies* Vol. 26, No. 6, pp. 915-939

Fawcett, R. (1987) "Forward" in Ventola, E. (1987) *The Structure of Social Interaction: A Systemic Approach to the Semiotics of Service Encounters* Open Linguistics Series London: Frances Pinter, pp. xvii-xix

Fandy, M. (2000) "Information technology, trust, and social change in the Arab world" *The Middle East Journal* Vol. 53, No. 3, pp78-93

Feghali, E. (1997) "Arab Cultural Communication Patterns" *International Journal of Intercultural Relations* Vol. 21, No. 3, pp. 345-378

Fensel, D., Hendler, J. and Lieberman, H. (2003) *Spinning the Semantic Web* Cambridge, MA: The MIT Press

Filotto, U., Tanzi, M. And Saita, F. (1997) "Customer needs and front-office technology adoption" *International Journal of Bank Marketing* Vol. 15, pp. 13-21

Fischer, C. S. (1992) *America Calling: a Social History of the Telephone to 1940* Berkeley, CA: University of California Press

Fisher, R., Maltz, E. and Jaworski, B. (1997) "Enhancing Communication between Marketing and Engineering: The Moderating Role of Relative Functional Identification" *The Journal of Marketing* Vol. 61, pp. 54-70

Fletcher, R. (2006) "The impact of culture on web site content, design, and structure: An international and a multicultural perspective" *Journal of Communication Management* Vol. 10, No. 3, pp. 259-273

Ford, J. D. and Ford, L. W. (1995) "The role of conversations in producing intentional change in organizations" *The Academy of Management Review* Vol. 20, No. 3, pp. 541-571

French, T., Polovina, S. and Vile, A. (1999) 'Semiotics of E-commerce: Shared Meanings and Generative Futures', *Proceedings of BIT'99* 3-4 November 1999, ISDN 0-905304-30-6.

Fu, L., Meng, Y., Xia, Y. and Hao, Y. (2010) "Web Context Extraction based on Webpage Layout Analysis" *2010 Second International Conference on Information Technology and Computer Science* IEEE Computer Society, pp. 40-43

Gane, C. and Sarson, T. (1977) *Structured systems analysis: tools and techniques*, IST Databooks, Improved System Technologies McDonnell Douglas Professional Services Co.

Garfinkel, H. (1967) *Studies in Ethnomethodology* Englewood Cliffs, NJ: Prentice-Hall,

Gidden, A. (1984) *The Constitution of Society* Cambridge, MA.: Cambridge University Press,

Glenn, E.S., Witmeyer, D. and Stevenson, K. A. (1977) "Cultural styles of communication" *International Journal of Intercultural Relations* Vol. 1, No. 3, pp. 52-66

Goffman, E. (1959) *The Presentation of Self in Everyday Life* New York: Anchor Books

Goffman, E. (1981) *Forms of Talk* Philadelphia: University of Pennsylvania

Gong, W. (2009) "National culture and global diffusion of business-to-consumer e-commerce" *Cross Cultural Management: An International Journal* Vol.16, No. 1, pp. 83-101

Gould, E., Zakaria, N. and Mohd Yusof, S. A. (2000) "Applying culture to website design: a comparison of Malaysian and US Web sites" *International Professional Communication Society International Communication and ACM Special Interest Group on Documentation,* Conference Proceedings (IEEE Professional Communication Society)/SIGDOC.

Gruber, T. R. (1993) "A translation approach to portable ontologies" *Knowledge Acquisition* Vol.5, No. 2, pp. 199-220

Gumpertz, J. (1982a) *Discourse Strategies* Studies in Interactional Sociolinguistics 1. Cambridge: Cambridge University Press

Gumpertz, J. (1982b) *Language and Social Identity,* Cambridge: Cambridge University Press

Gunasekaran, A. (2002) 'E-commerce and its impact on operation management' *International Journal of Production Economics* Vol. 75, pp. 168-197

Gundykunst, W. B and Ting-Toomey, S. eds/ (1988) *Culture and interpersonal communication* Newbury Park, CA: Sage

Gunning, R. (1968) *The Technique of Clear Writing* New York, NY: McGraw-Hill

Hall, E. T. (1959) *The Silent Language* Greenwich: Fawcett

Hall, E. T. (1963) "Proxemics- the study of man's spatial relations and boundaries" in Gladston, I. Ed/ (1963) *Man's Image in Medicine and Anthropology* New York: International University Press, pp. 422-45

Hall, E. T. (1976) *Beyond Culture* Garden City, N.Y.: Doubleday

Hall, E.T. (1983) *The Dance of Life* New York: Anchor Books

Hall, E.T. (1991) *Context and Meaning. Intercultural Communication: A Reader*, Belmont, CA: Wadsworth, pp. 46-55

Halliday, M. A. K. (1978) *Language as social semiotic. The social interpretation of language and meaning* Open University Set Book, London: Edward Arnold

Halliday, M. A. K. (1985) *An Introduction to Functional Grammar* London: Edward Arnold

Halliday, M. A. K. and Matthiessen, C. M. I. M. (1999) *Construing experience through meaning: A language-based approach to cognition* London: Continuum

Hance, B. J., Chess, C. and Sandman, P. M. (1990) *Industry Risk Communication Manual* Boca Raton, Florida: Lewis Publishers

Harris, R. and Davidson, R. (1999) "Anxiety and involvement: cultural dimension of attitudes towards computers in developing societies" *Journal of Global Information Management* Vol. 7, No.1, pp. 26-38

Harris, R., Palvia, P. C. and Hunter, M. G. (1996) "Information systems development: a conceptual model and a comparison of methods used in Singapore, USA and Europe" *Journal of Global Information Management* Vol. 4, No. 3, pp. 5-16

Hasan, R. (1984) *Understanding Reading Comprehension* Newark, DE: IRA.

Hasan, R. (1992) "Speech Genre, Semiotic Mediation and the Development of Higher Mental Functions" *Language Sciences* Vol. 14, No. 4, pp. 489-528

Hasselbring, W. and Weigand, H. (2001) "Languages for electronic business communication: state of the art" *Industrial Management and Data Systems* Vol. 101, No. 5, pp. 217-227

Hedges, A. (1985) 'Group Interviewing' in Walker, R. ed/ (1985) *Applied Qualitative Research* Gower, Aldershot

Hemenway, K. and Calishain, T. (2003) *Spidering Hacks,* O'Reilly Media.

Hofstede, G. (1980) *Culture's Consequences: International Differences in Work-related Values* Beverley Hills, CA: Sage

Hofstede, G. (1984) "The cultural relativity of the quality of life concept" *Academy of Management Review* Vol. 9, No. 3, pp. 389-398

Hofstede, G. (1991) *Cultures and Organizations- Software of the Mind* New York: McGraw-Hill

Hofstede, G. (1997) *Cultures and organizations: Software of the mind* London: McGraw-Hill

Hendrix, J. (2001) *Public Relations Cases* Belmont, CA: Wadsworth

Hermeking, M. (2006) "Culture and Internet Consumption: Contributions from Cross-Cultural Marketing and Advertising Research'" *Journal of Computer-Mediated Communication* Vol. 11, No. 1, pp. 192-216

Herskovitis, M. J. (1955) *Cultural anthropology* New York: Knopf

Hjelmslev, L. (1963) *Prolegomena to a Theory of Language* Menasha, Wisconsin: The University of Wisconsin Press

Hodge, R. and G. Kress (1974) “Transformations, models and processes: towards a useable linguistics” *J Lit Semantics* Vol. 4, No. 1, pp. 5-21

Hodge, R. and Kress, G. (1979) *Language as Ideology* Routledge and Kegan Paul

Hodge, R. and Kress, G. (1988) *Social Semiotics* Polity Press

Hoffman, L. and Novak, P. (1996) “Marketing in hypermedia computer-mediated environments: conceptual foundations” *Journal of Marketing* Vol. 60, pp. 50-68

Hofstede, G. (1997) *Cultures and organizations: Software of the mind.* McGraw-Hill, London.

Hofstede, G. (2001) *Culture's Consequences* Thousand Oaks, CA: Sage Publication

Hooft, V. and Stegwee, R. (2001) ‘E-Business Strategy: How to Benefit from Potential’ *Electronic Networking Applications and Policy* Vol. 14, No. 1, pp. 44-54

Hooley, G. J. and Saunders, J. (1993) *Competitive Positioning* Englewood Cliffs, NJ: Prentice-Hall

Huarng, A. and Christopher, D. (2003) ‘Planning an effective Internet retail store’ *Marketing Intelligence and Planning* Vol. 21, No. 3, pp. 230-238

Hubona, G., Truex, D., Wang, J. and Straub, D. (2006) *Cultural and globalization issues impacting the organizational use of information technology* New York: Armonk

Hymes, D. (1972) “Models of the interaction of language sand social life” in Gumperz, J. and Hymes, D. eds/ (1972) *Directions in Sociolinguistics: the Ethnography of Communication,* New York: Holt, Rinehart and Winston, pp. 35-71

Hymes, D. (1974) “The ethnography of speaking” in Blount, B. ed/ (1974) *Language, Culture and Society* Cambridge Mass: Winthrop, pp. 189-223

Ing, S. (2002) “Internet Marketing Involvement and Consumer Behavior” *Asia Pacific Journal of Marketing and Logistics* Vol. 14, pp. 36-53

Javalgi, R. (2005) “An assessment and strategic guidelines for developing e-commerce in the Asia” *International Journal of Management* Vol. 22, No. 4, pp. 523-532

Jensen, M. (2008) “Online marketing communication potential” *European Journal of Marketing* Vol. 42, No. 3/4, pp. 502-525

Johansson, C. and Heide, M. (2008) “Speaking of change: three communication approaches in studies of organizational change” *Corporate Communications: An International Journal,* Vol. 13, pp. 288-305

John, V. (1972) *Styles of learning-styles of teaching: Reflections on the education of Navajo children*, New York: Teachers College Press

Johnstone, B. and Koch, B. (1983) “Presentation as proof: The language of Arabic rhetoric” *Anthropological Linguistics* Vol. 25, No. 1, pp. 47-60

Kamaraienen, V. (2001) ‘Cost-effectiveness’ *International Journal of Retail and Distribution Management* Vol. 29, No. 1, pp. 96-99

Kan, S. (1995) *Metrics and Models in Software Quality Engineering* Boston, MA: Addison-Wesley

Kardaras, D. and Papthanssion, E. (2000) “The Development of B2C e-commerce in Greece: Current Situation and Future Potential” *Internet Research* Vol.10, pp. 284-294

Khalid, M. (1977) “The sociocultural determinants of Arab diplomacy” in Atiyeh, G. N. Ed/ (1977) *Arab and American Cultures* Washington DC.: American Institute for Public Policy Research, pp. 123-142

Kimbrough, S. and Moore, S. (1997) “On automated message processing in electronic commerce and work support systems: speech act theory and expressive felicity” *ACM Transactions on Information Systems*, Vol. 15, No. 4, pp. 321-367

Kirlidog, M. (1996) “Information technology transfer to a developing country: executive information systems in Turkey” *Information Technology and People* Vol. 9, No. 3, pp. 55-84

Kitchen, P. J. and de Pelsmacker, P. (2004) *Integrated Marketing Communication: A Primer* London, Taylor and Francis.

Kluckhohn, F. R. and Strodtbeck, F. Z. (1961) *Variations in value orientations* West Port, CT: Greenwood Press

Kotter, J. P. (1990) *A Force for Change: How Leadership Differs from Management* New York, NY: The Free Press

Kotter, J. P. (1996) *Leading Change* Harvard, CA: Harvard Business School Press

Kress, G. (19850 *Linguistic Processes in Sociocultural Practice* Geelong, Deakin University Press

Kress, G. (1988) *Communication and Culture* UNSW Press

Kress, G. and Van Leeuwen, T. (1990) *Reading Images* Victoria, Australia: Deakin University

Labov, W. (1972) *Sociolinguistic Patterns* Philadelphia: University of Pennsylvania Press

Labov, W. and Waletsky, J. (1967) “Narrative analysis: oral versions of personal experiences” in Helm, J. eds/ (1967) *Essays on the Verbal and Visual Arts* American Ethnological Society, Washington, D. C: University of Washington Press, pp. 12-14

Lagrosen, S. (2005) “Effects of the internet on the marketing communication of service companies” *Journal of Service Marketing* Vol.19, No. 2, pp. 63-69

Langefors, B. (1966) *Theoretical Analysis of Information Systems* Lund: Studentlitteratur

Langefors, B. (1995) *Essays on Infology* Edited and with an introduction by Bo Dahlbom, Lund: Studentlitteratur

Langer, R. and S. Thorup (2006) "Building trust in times of crisis: storytelling and change communication in an airline company" *Corporate Communications: An International Journal* Vol. 11, No. 4, pp. 371-390

Laudon, K. and Traver, C. (2003) *E-Commerce Business, Technology, Society* Addison Wesley

Lebart, L. (2000) "Contiguity Analysis and Classification" in Gaul, W, Opitz O. and Schader, M. eds (2000) *Data Analysis* Berlin: Springer, pp. 233-244

Lee-Kelly, L., Gilbert, D. and Al-Shehabi, N. (2004) "Virtual exhibitions: an exploratory study of Middle East exhibitors' disposition" *International Marketing Review* Vol. 21, No. 6, pp. 634-644

Lee, W, Tan, T. and Hameed, S. (2006) 'Polychronicity, the internet, and the mass media: a Singapore study' *Journal of Computer-Mediated Communication* Vol. 11, No. 1, pp. 300-316

Leech, G. (1983) *Principles of Pragmatics* London: Longman

Lemke, J. L. (1998) "Visual and verbal semiotics in scientific texts" in Martin, J. R. and Veel, R. eds/ (1998) *Reading Science: Critical and functional perspectives on discourse in science* London: Routledge

Leonardi, P. M. (2002) "Cultural variability in web interface design: Communicating U.S. Hispanic cultural values on the internet" in Sudweeks, F. and Ess, C. eds/ (2002) *Proceedings of the Third International Conference on Cultural Attitudes Towards Technology and Communication,* Murdoch, Western Australia: Murdoch University, Australia, pp. 297-315

Levinson, S. (1983) *Pragmatics* Cambridge: Cambridge University Press

Levitt, T. (1983) "The globalisation of markets" *Harvard Business Review* Vol. 61, No. 3, pp. 92-102

Lewis, L. K., Schmisseur, A. M, Stephens, K. K. and Weir, K. E. (2006) "Advice on communicating during organizational change: the content of popular press books" *The Journal of Business Communication* Vol. 43, No. 113-137

Libai, B, Biyalogorsky, E & Gerstner, E 2003, 'Setting referral fees in affiliate marketing', *Journal of Service Research,* Vol.5, No. 4, pp. 303-315

Lincoln, Y. S. and Guba, E. G. (1985) *Naturalistic Inquiry* London: Sage

Lindgreen, A., Palmer, R. and Vanhamme, J. (2004) "Contemporary marketing practice: theoretical propositions and practical implications" *Marketing Intelligence and Planning* Vol. 22, No. 6, pp. 673-692

Liu, C, Arnett, K. P., Capella, L. M. and Beatty, R. C. (1997) "Web sites of the fortune 500 companies: facing customers through home pages" *Journal of Information and Management* Vol. 31, No. 6, pp. 335-345

Liu, J, Tarn, J. and Wen, H. (2004) "Adopting e-commerce Web site operation modes: The current state of large US firms" *Information Management and Computer Security* Vol. 12, No. 1, pp. 73-90

Lockett, A. and Littler, D. (1997) "The adoption of direct banking services" *Journal of Marketing Management* Vol.13, No. 8, pp. 791-811

Marcus, A. and Gould, E.W. (2000) "Crosscurrents: cultural dimensions and global web user-interface design" *ACM Interactions* Vol. 7, No. 4, pp. 32-46

Luhmann, N. (1990) *Essays on Self-Reference* New York: Columbia University Press

MacDonald, B. and Walker, R. (1975) "Case Study and the social philosophy of educational research" *Cambridge Journal of Education*, Vol 5, No 1, pp. 2-11

Macquarie Systemic Modelling Group (2011) 'SysGraph', accessed 29/8/2011 http://minerva.ling.mq.edu.au/Resources/AnalysisTools/Tools.htm

Mai, J. (2001) "Semiotics and Indexing: An Analysis of the Subject Indexing Process" *Journal of Documentation* Vol. 57, No. 5, pp. 591–622

Malhotra, N. (2004) *Marketing Research: An Applied Orientation* Prentice Hall

Malinowski, B. (1923/1946) "The Problem of Meaning in Primitive Languages" in Ogden, C. K. and Richards, I. A. (1946) *The Meaning of Meaning* 8th Edition, New York: Harcourt Brace and World pp. 296-336

Marcus, A. (2001) "Babyface design for mobile devices and the Web" in Smith, M. J and G. Salvendy eds/ (2001) *Conference proceedings, Human-Computer Interface Internet (HCII)* Vol.2, August pp. 514-518

Martin, J. R. (1992) *English Text: System and Structure*, Amsterdam: Benjamins

Martin, J. R. (1994) "Macro-genres: The ecology of the page" *Network* 21, pp. 29-52

Martin, J. R. (2009) "Genre and language learning: A social semiotic perspective" *Linguistics and Education*, Vol. 20, No. 1, pp. 10–21

Martin, L. and Matlay, H. (2003) "Innovative use of the Internet in established small firms: the impact of knowledge management and organisational learning in accessing new opportunities" *Qualitative Market Research: An International Journal*, Vol. 6, No. 1, pp. 18-26

Marwick, N. and Fill, C. (1997) “Towards a framework for managing corporate identity” *European Journal of Marketing* Vol. 31, No 5/6, pp. 396-409

Massad, N., Heckman, R. and Crowstone, K. (2006) “Customer satisfaction with electronic service encounter” *International Journal of Electronic Commerce* Vol. 10, No. 4, pp. 73-104

Maturana, H. and Varela, F. (1980) *Autopeisis and Cognition*, D. Dordrecht: Reidel Publishing Company

McCort, D. J. and Malhotra, N. K. (1993) “Culture and consumer behavior: toward an understanding of cross-cultural consumer behavior in international marketing” *Journal of International Consumer Marketing* Vol. 6, No. 2, pp. 91-127

Mehler, A., Sharoff, S. and M. Santini eds/ (2010) *Genres on the Web: Computational Models and Empirical Studies* Springer Dordrecht

Melrose, R. (2005) “How a neurological account of language can be reconciled with a linguist’s account of language: The case of systemic-functional linguistics” *Journal of Neurolinguistics*, Vol. 18, No. 5, pp. 401–421

Merwe, R. and Bekker, J. (2003) “A framework and methodology for evaluating e-commerce Web sites” *Internet Research: Electronic Networking Applications and Policy* Vol. 13, No. 5, pp. 330-341

Miles, M. B. and Huberman, A. M. (1994) *Qualitative Data Analysis: An Expanded Sourcebook* Newbury Park, CA: Sage Publications

Milward, S. (2000) “The relationship among Internet exposure, communicator context and rurality” *American Communication Journal* Vol. 3, No. 3, pp. 3-9

Min, H. and Gall, W. (1999) “Electronic Commerce Usage in Business-to-Business Purchases” *International Journal of Operations and Production Management* Vol. 19, No. 9, pp. 909-921

Mitev, N. N. and Marsh, A. E. (1998) “Small businesses and information technology: risk, planning and change” *Journal of Small Business and Enterprise Development* Vol. 5, pp. 228-245

Mok, C. (1996) *Designing Business: Multiple Media*, California, USA: Adobe Press/ Multiple Disciplines

Morden, T. (1999) “Models of national culture- a management review” *Cross Cultural Management* Vol. 6, No. 1, pp. 19-44

Morris, C. W. (1938/1970) *Foundations of the Theory of Signs* Chicago: Chicago University Press

Morris, C. W. (1946) *Signs, Language and Behavior* New York: Prentice-Hall

Morse, J. and Field, P. (1996) *Nursing Research: The application of qualitative approaches* London: Chapman and Hall

Nail, J. (2002) *When Online Branding Works* London: Forrester Research, Inc,

Neuman, W. L. (2003) *Social research methods: Qualitative and Quantitative Approach* Sydney: Person education

Niederst, J. (1999) *Web Design in a Nutshell: A Desktop Quick Reference* Cambridge: O'Reilly

Nielsen, J. (2000a) *Designing Web Usability* Indiana: New Riders Publishers

Nielsen, J. (2000b) 'Is Navigation Useful?' *Useit.com.*

Nielsen, J. and Pernice, K. (2010) *Eyetracking Web Usability* Berkeley, California: New Riders/Peachpit

Nielsen, J. and Tahir, M. (2001) *Homepage Usability: 50 Websites Deconstructed* New Riders Publishing

Nitish, S., Hongxin, Z. and Xiaorui, H. (2005) "Analyzing the cultural content of websites: A cross-national comparison of China, India and US" *International Marketing Review* Vol. 22, No. 2, pp. 129-146

Nöth, W. (1990) *Handbook of Semiotics* Bloomingtion and Indianapolis: Indiana University Press

Nydell, M. (1987) *Understanding Arabs: A Guide for Westerners* Yarmouth, ME: Intercultural Press

O'Donnell, M. (2011) 'Systemic Coder', accessed 29/8/2011, http://www.wagsoft.com/Coder.html

O'Sullivan, T., Hartley, J., Saunders, D., Montgomery, M. and Fiske, J. (2001) *Key concepts in communications* London: Routledge

Otubanjo, B. and Melewar, T. (2007) "Understanding the meaning of corporate identity: a conceptual and semiological approach" *Corporate Communications: An International Journal*, Vol. 12, No. 4, pp. 414 - 432

Palumbo, F. and Herbig, P. (1998) "International marketing tool: the Internet" *Industrial Management and Data Systems* Vol. 98, No. 6, pp. 253-261

Papatla, P. and Bhatnagar, A. (2002) "Choosing the right mix of on-line affiliates: how do you select the best?" *Journal of Advertising Research* Vol. 31, No. 3, pp. 69-81

Parasuraman, A. (2000) "Technology readiness index (TRI): a multiple-item scale to measure readiness to embrace new technologies" *Journal of Service Research* Vol. 2, No. 4, pp. 307-320

Park, C. and June, J. (2003) "A cross-cultural comparison of internet buying behaviour" *International Marketing Review*, Vol. 20, No. 5, pp. 534-553

Patai, R. (1983) *The Arab Mind*, New York: Charles Scribner and Sons

Patton, M. Q. (1990) *Qualitative Evaluation and Research Methods*, Newbury Park, California: Sage Publications

Paul, P. (1996) "Marketing on the internet" *Journal of Consumer Marketing* Vol. 13, No. 4, pp. 27-39

Peppard, J. and Ward, J. (1999) "'Mind the Gap': diagnosing the relationship between the IT organisation and the rest of the business" *Journal of Strategic Information Systems* Vol. 8, No. 1, pp. 29-60

Pernice, K. and Nielsen, J. (2009) "Eyetracking Methodology: How to Conduct and Evaluate Usability Studies Using Eyetracking" www.useit.com/eyetracking/methodology

Perry, C. (1998) "Processes of a Case Study Methodology for Postgraduate Research in Marketing" *European Journal of Marketing* Vol 32, No. 9/10, pp. 785-802

Peters, T. (1989) *Thriving on Chaos* London: Pan

Petty, R. E. and Cacioppo, J. T. (1986) *Communication and Persuasion: Central and Peripheral Routes to Attitude Change*, New York, NY: Springer-Verlag

Porter, M. E. (2001) "Strategy and the internet" *Harvard Business Review* Vol. 79, No. 3, pp. 63-78

Powell, T. A. (2000) *Web Design: The Complete Reference*, McGraw-Hill, Osbourne

Ranchhod, A., Guran, C. and Lace, J. (2002) "On-line messages: developing an integrated communication model for biotechnology companies" *Qualitative Market Research: An International Journal*, Vol. 5, No. 1, pp. 6-18

Reardon, K. (1987) *Where Minds Meet* Belmont, CA.: Wadsworth Publishing Co.

Reichheld, F. (1996) *The Loyalty Effect* Boston, MA,: Harvard Business School Press

Rogers, E. M. (1983) *Diffusion of Innovations* New York: The Free Press

Romano, C. (1989) "Research strategies for small business: a case study" *International Small Business Journal* Vol. 7, No. 4, pp. 35-43

Rosenfeld, L. and Morville, P. (1989) *Information Architecture for the World Wide Web* Cambridge: O'Reilly & Associates,

Rous, B. (1999) "How to succeed in online markets. ACM: a case study" *The Journal of Electronic Publishing* Vol. 4, No. 4, pp. 10

Ruyter, K. D. and Scholl, N. (1998) “Positioning qualitative market research: reflections from theory and practice” *Qualitative Market Research: An International Journal* Vol.1, pp. 7-14

Sacks, H. (1995) *Lectures on Conversation* Blackwell Publishing

Sandover, L. A and Porter, R. E. (1991) *Communication between Cultures* Belmont, CA.: Wadsworth

Sano, D. (1996) *Designing Large-Scale Web Sites: A Visual Design Methodology* John Wiley and Sons.

Schwartz, S. H. (1994) “Beyond individualism/collectivism: new cultural dimensions of values” in Uchol, K, Harry, C. T., Cigdem, K., Sang-Chin, C. and Gene, Y. eds/ (1994) *Individualism and Collectivism: Theory, Method and Applications* Thousand Oaks, CA: Sage Publications pp. 85-119

Schweizer, H. (2004) “E-learning in business” *Journal of Management Education* Vol. 28, No. 6, pp. 674-692

Scharl, A. (2000) *Evolutionary Web Development* London: Springer Publishers

Schegloff, E. A. (2007) *Sequence organization in interaction: A Primer in Conversation Analysis Volume I* Cambridge: Cambridge University Press

Searle, J. (1969) *Speech Acts* Cambridge: Cambridge University Press

Seda, C. (2004) *Search Engine Advertising: Buying Your Way to the Top to Increase Sales* Indianapolis: Macmillan Computer Publishing

Shannon, C. E. and Weaver, W. (1949) *The Mathematical Theory of Communication* Urbana: University of Illinois Press

Sheth, J. N., Sisodia, R. S. and Sharma, A. (2000) “The antecedents and consequences of customer-centric marketing” *Journal of the Academy of Marketing Science* Vol. 28, No. 2, pp. 55-66

Sicilia, M. and Lytras, M. (2005) “The semantic learning organization” *The Learning Organization* Vol.12, No. 5, pp. 402-410

Siegel, D. (1997) *Creating Killer Web Sites* Indianapolis, IN: Hayden Books

Simon, J. L. (1969) *Basic research methods in social science: The art of empirical investigation* New York: Random House

Sillince, J. A. A. (1999) “The role of political language forms and language coherence in the organizational change process” *Organization Studies* Vol. 20, No. 3, pp. 485-518

Sinclair, J. and Coulthard, R. (1975) *Towards an Analysis of Discourse* Oxford: Oxford University Press

Singh, N., Fassott, G., Zhoa, H. and Boughton, P. D. (2006) "A cross cultural analysis of German, Chinese, and Indian consumers' perception of web site adaptation" *Journal of Consumer Behaviour* Vol. 5, No. 1, pp. 56-68

Singh, N., Furrer, O. and Ostinelli, M. (2004) "To localize or standardise on the web: Empirical evidence from Italy, India, Netherlands, Spain and Switzerland" *Multinational Business Review* Vol.12, No. 1, pp. 69-87

Singh, Nitish and Dan Baack (2004), "Website adaptation: Cross-Cultural Comparison of U.S. and Mexican Web sites," *Journal of Computer Mediated Communication (JCMC),* Vol. 9, No. 4. (accessed from Wiley Online Library: http://onlinelibrary.wiley.com/doi/10.1111/j.1083-6101.2004.tb00298.x/full) (No page numbers provided for this article).

Singh, N. and Matsuo, H. (2004) "Measuring cultural adaptation on the web: a study of US and Japanese websites" *Journal of Business Research* Vol. 57, No. 8, pp. 864-72

Sjöström, J. (2010) *Designing Information Systems. A Pragmatic Account* Department of Informatics and Media, Uppsala University, Universitetstryckeriet, Uppsala, Sweden.

Smith, A., Dunckley, L., French, T., Minocha, S. and Chang, Y. (2004) "A process model for developing usable cross-cultural websites" *Interacting with Computers* Vol.16, No. 1, pp. 63-91

Smithson, M. (1986) *Fuzzy Set Analysis for Behavioral and Social Sciences* Recent Research in Psychology Series, Springer

Smithson, M. and Verkuilen, J. (2006) *Fuzzy Set Theory: Applications in the Social Sciences* Quantitative Applications in the Social Sciences, Thousand Oaks, California: Sage Publications

Spiggle, S. (1994) "Analysis and Interpretation of Qualitative Data in Consumer Research" *Journal of Consumer Research* Vol. 21, No. 3, pp. 491-503

Sproull, L. S., Kiesler, S. and Zubrow, D. (1984) *Encountering and Alien Culture* Pittsburgh, PA: Carnegie Mellon University Press

Stake, R. E. (1978) "The case study method in social inquiry" *Educational Researcher* Vol 7, No. 2, pp. 5-8

Stamper, R. (1996) "Signs, Information, Norms and Systems" in Holmqvist, B., Andersen, P. B., Klein, H. and Posner, R. (1996) *Signs of Work: Semiosis and Information Processing in Organisations,* Foundations of Communication and Cognition Series, Berlin: Walter de Gruyter, pp. 349-397

Stamper, R., Liu, K., Hafkamp, M. and Ades, Y. (2000) "Understanding the role of signs and norms in organizations- a semiotic approach to information systems design" *Behaviour and Information Technology* Vol. 19, No. 1, pp. 15–27

Statistics, A. o. P. a. G (2007) *Population and Housing Characteristics in the Kingdom of Saudi Arabia* Kingdom of Saudi Arabia Demographic Survey

Sterne, J. (1996) *World Wide Web Marketing: Integrating the Internet into your Marketing Strategy* New York: Katherine Schowalter

Steward, S. (2004) *PDF Hacks. 100 Industrial Strength Tips and Tools* Cambridge: O'Reilly Media Inc.

Straub, D., Loch, K. D. and Hill, C. E. (2001) "Transfer of information technology to the Arab world: a test of cultural influence modelling" *Journal of Global Information Management* Vol. 9, No. 4, pp. 6-48

Sykes, W. (1991) "Taking stock: issues from the literature on validity and reliability in qualitative research" *Journal of the Market Research Society* Vol. 33, No. 1, pp. 5-13

Tagliavini, M., Ravarini, A. and Antonelli, A. (2001) "An Evaluation Model for Electronic Commerce Activities within SMEs" *Information Technology and Management* Vol. 2, No. 2, pp. 211-230

Takada, H. and Jain, D. (1991) "Cross-national analysis of diffusion of consumer durable goods in Pacific Rim countries" *Journal of Marketing Management* Vol. 55, No. 2, pp. 48-54

Technology, M. o. C. a. I (2008) *Report of The Development of ICT Sector in Saudi Arabia* Kingdom of Saudi Arabia

Thelwall, M. (2000) "Effective websites for small and medium-sized enterprises" *Journal of Small Business and Enterprise Development* Vol. 7, No. 2, pp. 149-159

Thibault, P. J. (1991) *Social Semiotics as Praxis. Text, Social Meaning Making, and Nabokov's Ada*, Theory and History of Literature Series, Vol. 74, Minneapolis: University of Minnesota Press

Timmers, P. (2000) *Electronic Commerce: Strategies and Models for Business-to-Business Trading* New York, NY: John Wiley and Sons

Trask, R. L. (1993) *A Dictionary of Grammatical Terms in Linguistics* London and New York: Routledge

Triandis, H. C. (1994) "Theoretical and Methodological Approaches to the Study of Collectivism and Individualism" in Uchol, K., Triandis, H. C., Kagitcibasi, C., Choi, S. and Yoon, G. eds/ (1994) *Individualism and Collectivism: Theory, Method, and Applications*, Thousand Oaks, CA: Sage Publications, pp. 41-51

Trompenaars, A. and Hampden-Turner, C. (1998) *Riding the Waves of Culture: Understanding Cultural Diversity in Global Business* New York: McGraw-Hill Professional

Trompenaars, F. (1998) *Riding the waves of culture: understanding cultural diversity in global business* 2nd Edition, New York: McGraw-Hill

Turner, J. A. and Karasek, R. (1984) "Software Ergonomics: Effects of Computer Application Design Parameters on Operator Task Performance and Health" *Ergonomics* Vol. 27, No. 6, pp. 663-690

Unsworth, L. (2006) "Image/Text Relations and Intersemiosis: Towards Multimodal Text Description for Multiliteracies Education" *Proceedings of the 33rd International Systemic Functional Congress*, pp. 1165-1205

Urde, M. (2003) "Core value-based corporate brand building" *European Journal of Marketing* Vol. 37, No. 7/8, pp. 1017-1040

Usinier, J. C. and Roulin, N. (2010) "The influence of High-and-Low-Context Communication Styles on the Design, Content and language of Business-To-Business Web Sites" *Journal of Business Communication* Vol.47, No. 2, pp. 189-227

Van Den Bosch, A., Elving, W. J. L. and De Jong, M. D. T. (2006) "The impact of organisational characteristics on corporate visual identity" *European Journal of Marketing*, Vol. 40, No. 7/8, pp. 870-885

Van Riel, C. B. M. and Balmer, J. M. T. (1997) "Corporate identity: the concept, its measurement and management" *European Journal of Marketing* Vol.31, No. 5, pp. 340-355

Van Valin Jr., R. D. (1993) "A synopsis of Role and Reference Grammar" in R. D. Van Valin, Jr. ed/ (1993) *Advances in Role and Reference Grammar* Amsterdam: Benjamins pp. 1-164

Ventola, E. (1987) *The Structure of Social Interaction: A Systemic Approach to the Semiotics of Service Encounters* Open Linguistics Series London: Frances Pinter

Warren, P. (2003) "The next steps for the web: putting meaning into the web" *Computing and Control Engineering* Vol.1, No. 2, pp. 27-35

Watts, R. (2004) "The application of social semiotic theory to visual elements within corporate positioning material and the development of a viable methodology" *Journal of Communication Management* Vol. 8, No. 4, pp. 384-394

WayBack Machine (2011) accessed 29/8/2011 http://wayback.archive.org/web/

Webster, F. E. (1984) *Industrial Marketing Strategy*, New York, NY: John Wiley and Sons

Werner, J. and James, W. (1992) *Communication Theories: Origins, Methods, and Uses in the Mass Media* New York, NY: Longman

Whiting, B. B. and Whiting, J. W. M (1975) *Children of six cultures: A psycho-cultural analysis* Cambridge, MA: Harvard University Press

Wilcox, D. L., Ault, P. H., Agee, W. K. and Cameron, G. (2001) *Essentials of Public Relation* New York, NY: Addison-Wesley Educational Publishers

Windahl, S, Signitzer, B. and Olson, J. T. (1992) *Using Communication Theory* London: Sage

Wolfinbarger, M. and Gilly, M. C. (2001) "Shopping online for freedom, control, and fun" *California Management Review* Vol. 43, No. 2, pp. 34-55

Wurtz, E. (2006) "Intercultural communication on web sites: a cross-cultural analysis of web sites from high-context cultures and low-context cultures" *Journal of Computer-Mediated Communication* Vol. 11, No. 1, pp. 274-299

Yeo, A. (1996) "World-wide CHI: Cultural User Interfaces, A Silver Lining in Cultural Diversity" Vol. 28, No. 3, pp. 4-7

Yin, R. (1981) "The Case Study Crisis: Some Answers" *Administrative Science Quarterly* Vol. 26, No. 1, pp. 56-58

Yin, R. (1992) "The Case Study Methods as a Tool for Doing Evaluation" *Current Sociology* Vol. 40, No. 1, pp. 121-137

Zaheedi, F, Pelt, W. V. V. and Song, J. (2001) "A Conceptual Framework for International Web Design" *IEEE Transactions on Professional Communication* Vol. 44, No. 2, pp. 83-103

Zaharna, R. S. (1995) "Understanding Cultural Preferences of Arab Communication Patterns" *Public Relations Review* Vol. 21, No. 3, pp. 241-253

Zahedi, F, Pelt, W. V. C. and Song, J. (2001) "A Framework for Designing Usable Localised Business Websites" *Communications of the IBIMA*, Vol. 2010, IBIMA Publishing.

Zakaria, N., Stanton, J. M. and Sarkar-Barney, S. J. M. (2003) "Designing and implementing culturally-sensitive IT applications: The interaction of culture values and privacy issues in the Middle East" *Information Technology and People* Vol. 16, No.1, pp. 49-75

Zeithaml, A. and Gilly, C. (1987) "Characteristics affecting the acceptance of retailing technologies: a comparison of elderly and non-elderly consumers" *Journal of Retail Banking* Vol. 63, No. 1, pp. 49-68

Zwass, V. (1996) "Electronic commerce: structures and issues" *International Journal of Electronic Commerce* Vol.1, No. 1, pp. 3-23

Appendix 1
Australian eBusiness Web Page Analyses

A1.1 Introduction

This chapter presents the results of an analysis of Australian websites (Homepages) in line with the framework and methods developed in Chapter 4 of this thesis. Table A1.1 below, details the Australian websites by category, representing the research sample and which provide the basis for the analysis.

Table A1.1: Analysed Australian Websites organised by sector

A1.2	Banking and Insurance	
A1.2.1	Commonwealth Bank	www.commbank.com.au/
A1.2.2	National Australian Bank	www.nab.com.au/
A1.2.3	Australian & New Zealand Bank	www.anz.com.au
A1.2.4	Bankwest	www.bankwest.com.au
A1.2.5	*AAMI*	www.aami.com.au
A1.3	Telecommunications	
A1.3.1	Dodo	www.dodo.com.au
A1.3.2	TPG	www.TPG.com.au
A1.3.3	Telstra	www.telstra.com.au
A1.3.4	Optus	www.optus.com.au
A1.4	Food	
A1.4.1	Dairy Farmers	www.dairyfarmers.com.au
A1.4.2	Parmalat	www.parmalat.com.au/
A1.4.3	Fleurieu Milk	www.fleurieumilkco.com.au/
A1.5	Transportation	
A1.5.1	Murrays	www.murrays.com.au/
A1.5.2	Platinum Australia Business Tourism	www.businesstourismaustralia.com.au/
A1.5.3	Travelscene	www.travelscene.net.au/
A1.6	Energy	
A1.6.1	AGL	www.agl.com.au
A1.6.2	EnergyAustralia	www.energyaustralia.com.au/
A1.7	Others	
A1.7.1	Leading Edge Electronics	www.leadingedgeelectronics.com.au
A1.7.2	Holden	www.holden.com.au
A1.7.3	Officeworks	www.officeworks.com.au

A1.2 Banking and Insurance

A1.2.1 Commonwealth Bank

The Commonwealth Bank was founded under the Commonwealth Bank Act in 1911 and commenced operations in 1912, empowered to conduct both savings and general banking business. Today, the bank has grown to a business with more than 700,000 shareholders and over 38,000 employees. The bank offers a full range of financial services.

Page Design

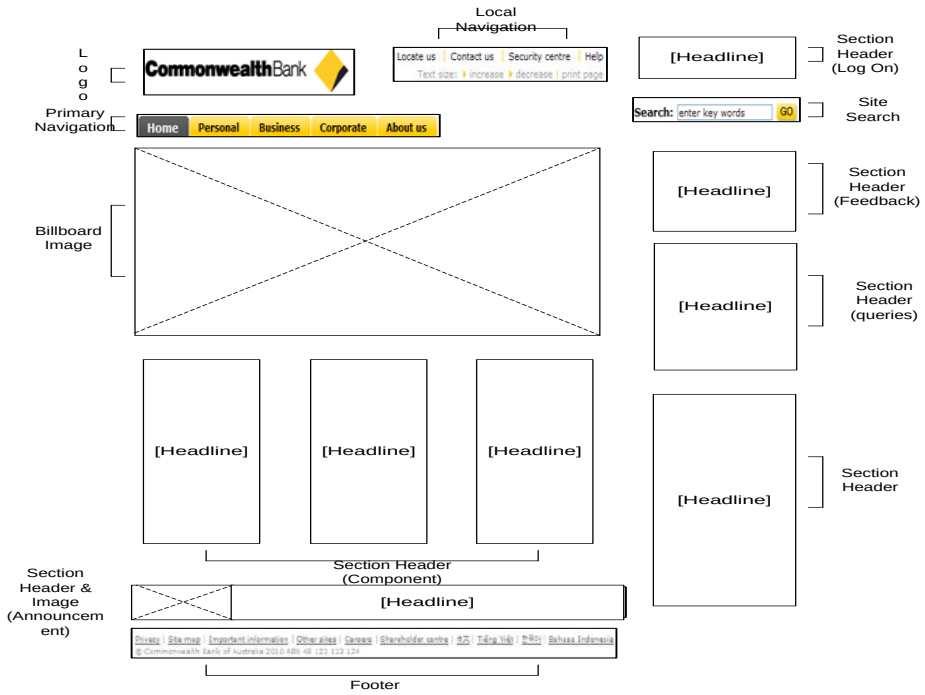
The page design in Figure A1.1 consists of a main image which is positioned at the top of the page. On the right side of the page, there is a link that relates to customer feedback, demonstrating the importance of customer opinions. Under this link, there is text related to services (ie. ATM, Credit Cards and exchange services) provided by the bank in addition to, advertisements about the bank. Also, there is a text block in the middle which is related to bank customers (Personal, Business and Corporate products). Under each of these titles, there are links to services belonging to each area.

Figure A1**.1** Commonwealth Bank Page Design

Page Wireframe and Components

The page wireframe in Figure A1.2 contains both local and global navigation system, a logo, site search and log on box at the top of the page. In addition, it contains a billboard image, also positioned at the top of the page. In the middle of the page, there are three column panels of headlines. At the bottom of the page, there is a one section header, which is connected to an image that relates to a bank announcement. On the right side of the page, there are three section headers that relate to feedback and other banking modules which lead to the implementation of services of the bank such as credit cards and foreign exchanges which are linked to a modular program.

Figure A1.**2**: Commonwealth Bank Page Wireframe



Compositional Semantics

Home Page-Vertical Axis

In Figure A1.1, the vertical axis is strong because it begins at the top of the page with an image (A) that is considered the most salient. The left side of the image (health diary) is heavier and more valued as it is positioned at the top of the page and to the left side of the image, rather than the right side of the same image (mother with her daughter). The image in total, reflects what is called the promise aspects regarding the bank offering and funding of community services, especially breast cancer research. It shows the ideal position of the company towards satisfying the needs of the community as a whole and in particular, its customers. The shape of the colour on the main image ranges from a dark sharp colour to a lighter colour at the base of the image. The hue of this colour and (the hands of the mother and her daughter) reflect the vectors that relates to the associated text which is considered the second prominent area (bottom) of the page A line or frame that separates the two areas (Photographic and Text) is evident. Five vectors lead to 1) textual information on the company, 2) the hue of the colour of the top image, the frame (line) that separates the top image from the text and the hands of the mother and her daughter, 3) the colour (yellow) of the rays of the sun on the mother's face is repeated again in the bottom right sector (Learn how...), 4) the colour (yellow) of the flower in the "healthy dairy" is repeated again in the bottom right sector (Learn how...), and 5) the logo of the "Breast Cancer Institute of Australia" as it points to the bottom section. The colour of the logo (blue) is repeated again in one of the microphones located at the far bottom of the site next to "Announcement" (B). The reading path vertically, is circular. It begins with the left side of the image (healthy dairy), in particular, the yellow flower , then moves to the right side (the mother and her daughter) and to the yellow sun rays on the mother's face to the bottom right (yellow) text "Learn how..." , then back on to the yellow flower at the top of the page. The image at the top of the page is considered more heavily weighted than the image of the two microphones.

Home Page-Horizontal Axis

In Figure A1.1, the three texts next to each other (Personal-Business-Corporate-"Offers-Videos") are considered less salient to the left, becoming to more salient to the right. Also, the text on the right side (Offers-Videos) is considered in this case the most ideal, most focused, and valued area of the page. The text (Business) is considered in this case the balancing centre of the page from the horizontal view. The small yellow arrows in these texts (Personal-Business-Corporate) act as a kind of vector to guide the viewer to the right text (Offers-Videos). From here, the reading path horizontally, represents a regular reading path from the left text to the text "Business" (the balancing centre), then to the right side text (Offers-Videos).

Home Page- Banner (A)

In Figure A1.1, it is evident that the left picture (healthy dairy booklet) is the most heavily weighted, being situated in the top and to the far left area of the page. Moving from the left to the right, the transfer process of the real (known areas) to the ideal aspects of the page is evident. Also, moving from the left to the right, the less salient image (healthy dairy booklet) to the most salient (mother with her daughter) is presented. The image (trees and the water in the lake) reflects what is called the balancing centre of the whole image. The two sections of this image from the left to the right are separated by a sharp line and frame which is represented by the back of the image of the women. In this image, a vector pointing from the left side (health diary booklet) toward the right image (A) (mother with her daughter) through the yellow flower in the cover of the booklet, toward the reflection of the sun rays on the woman's back is also evident. The reading path of this image is a regular reading path, starting from the left (healthy dairy booklet) and moving to the right (mother with her daughter), then on to other areas of the page.

Field and Tenor Relations

For the sake of convenience, Australian Field and Tenor Relations Field Relations are tabulated in their own Appendix 2. Field Relations for the components of the Commonwealth Bank website are listed in Appendix 2A (1). Tenor Relations for these components are listed in Appendix 2B (1).

Organising Scheme

In Figure A1.3, there are three types of Organising Scheme, which comprise Ambiguous Task-Oriented (A), Ambiguous Topical (B) and Ambiguous Hybrids (C).

Figure A1.**3**: Commonwealth Bank Organising Scheme

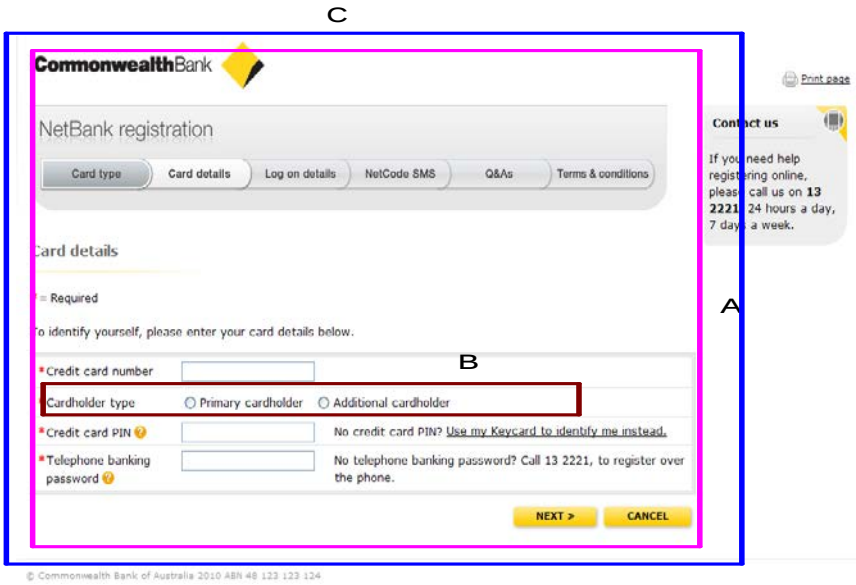


Image Analysis

In Figure A1.1, image (A) represents a visual offer as it doesn't demand the viewer to enter into an imaginary relation with it. Also, this image is seen from a low angle so the viewer has less power over it. The image is also seen from an oblique angle which excludes the level of involvement. Moreover, there is evidence that the social distance is represented here in a very close shot as the relation between the mother and her daughter is very personal. The modality here is real.

Image-Text Analysis

The image-text analysis is detailed in Figure A1.4 and clarified in Table A1.2.

Figure A1.**4**: Commonwealth Bank Text-Image analysis for Components (A and B)

A

B

Table A1.**2**: Text-image Relations - Commonwealth Bank

	Image	Text	Relationship
A	Health diary booklet & Mother with her daughter	"hope…breast cancer…Women's Health Diary"	Augmentation
B	Microphone	"Announcement"	Augmentation

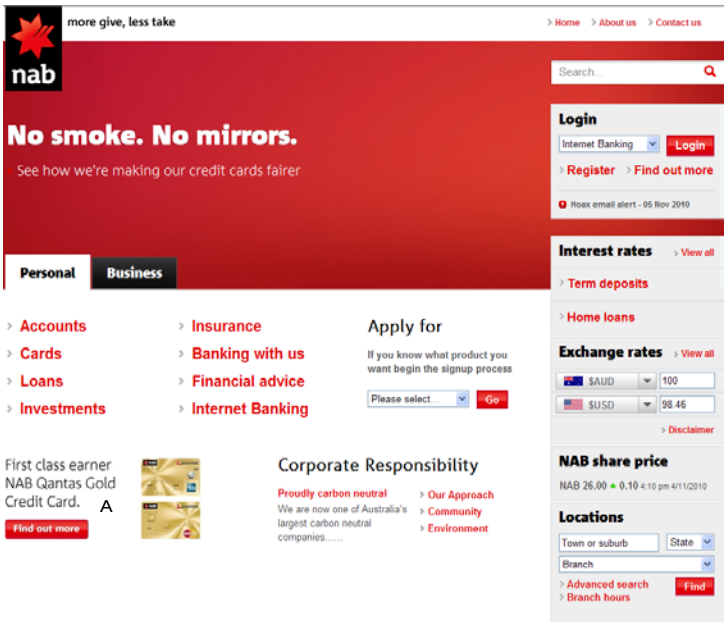
5.2.2 National Australian Bank

National Australia Bank Limited (NAB) is a financial services group that provides a comprehensive and integrated range of banking and financial services including wealth management throughout Australia, New Zealand, Asia, areas of the United Kingdom and a small US exposure. Founded in 1858 as the National Bank of Australasia, early growth was based in Victoria and South Australia. Further growth was achieved through the absorption of a number of regional banks. In 1981, the National Bank merged with the Commercial Banking Company of Sydney to form what is now the National Australia Bank.

Page Design

The page design in Figure A1.5 contains a main text which is positioned at the top of the page. On the right side of the page, there are some texts that are related to services provided by the bank. The first text represents a login function which is structurally separated from other links on the page to show its importance. Beneath this link, some exchange services and locations are listed. In the middle of the page, two column panels are organised according to the type of customer, either personal or business. Also, there is some text in the bottom section of the page which is related to credit cards (connected to an image) and corporate responsibility.

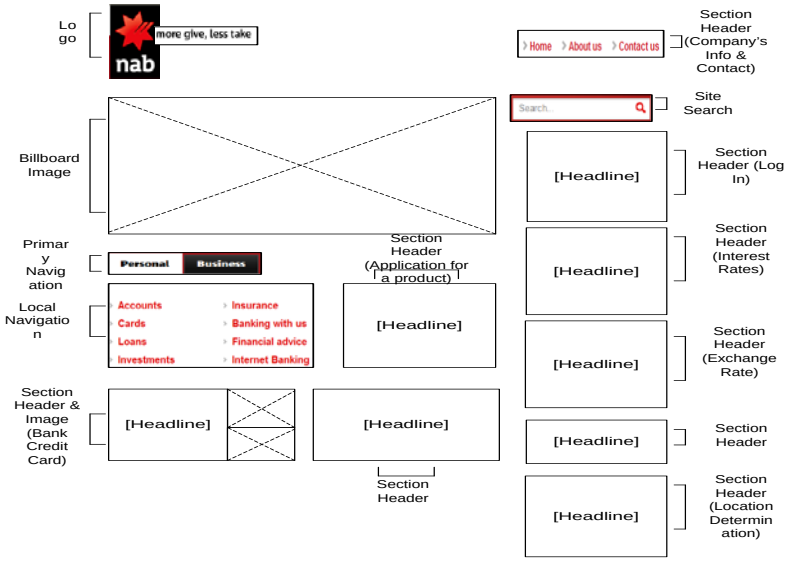
Figure A1.**5**: NAB Page Design



Page Wireframe and Components

The page wireframe in Figure A1.6 contains a logo, site search facility and company information and contact details located at the top of the frame. In addition, the top section of the frame contains a billboard image and a primary navigation system. On the right side are pointers to modules that facilitate foreign exchange and financial services and a branch location finder. In the middle of the frame, two column panels of headlines, local navigation and a module for applying for products are detected. At the bottom of the page, two section headers which represent credit cards and corporate responsibility are also detected.

Figure A1.**6**: NAB Page Wireframe



Compositional Semantics

Home Page-Vertical Axis

In Figure A1.5, the vertical axis is relatively weak because it doesn't appear at the top of the page (first area of the site) along with an image. The benefit of having an image in this area of the page is to reflect what is called the promise aspects regarding the services of the bank which show the ideal position of the bank towards its customers. The dark red colour of the caption in the place of the proposed image reflects the vector that relates to written text which is considered the next section (bottom) of the page. A line or frame separates the two areas (top and bottom) of the page. Four vectors lead to 1) a written text about the company (the real side of the company), 2) the dark red colour of the top caption, 3) the frame that separates the caption from the written text, and 4) the two words "credit cards" in the top caption as repeated in the shape of images in the bottom section of the page. The same background colour used in the top caption (first section of the page) is used again in the written text (second section of the page) as a background in the bottom area of the page. The reading path vertically, is regular. It begins with the top caption in the frame then moves to other areas of the page. The text (Local Navigation and "Apply for") is located in the middle of the page and is considered less heavily weighted than those located in the top section, however, is more heavily weighted than those at the bottom of the page.

Home Page-Horizontal Axis

In Figure A1.5, in the right hand section, the caption "Exchange Rates" is more salient and therefore appears to be more valued. The caption "Apply for" in the middle of the page is considered in this case, the balancing centre of the page, from the horizontal view. The red colour that is used in the site, acts as a kind of vector to guide the viewer to other areas of the page. From this, we determine the reading path horizontally, which is a regular reading path leading from the left side images (Credit Cards) to other areas on the page.

Field and Tenor Relations

Field Relations for the components are listed in Appendix 2A (2). Tenor Relations for the components are listed in Appendix 2B (2).

Organising Schemes

In Figure A1.7, one type of Organising Scheme, which is Ambiguous Task-Oriented (A) is detected. In Figure A1.8, three types of Organising Scheme, Ambiguous Metaphor-driven (A), Ambiguous Audience-specific (B) and Ambiguous Hybrids (C) are also evident.

Figure A1.**7**: NAB Organising Scheme (1)

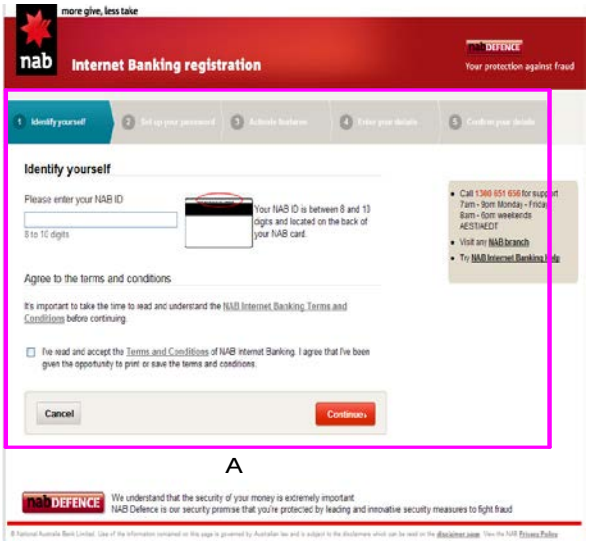


Figure A1.**8**: NAB Organising Scheme (2)

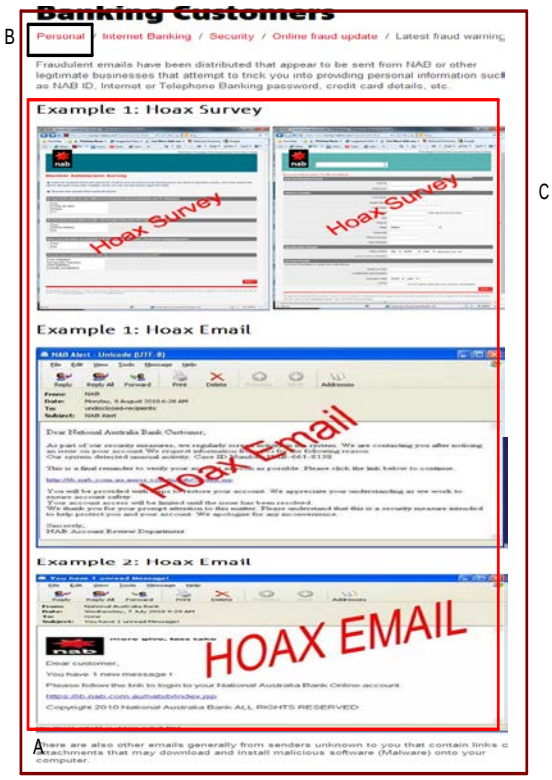


Image Analysis

In Figure A1.5, image (A) represents a visual offer which doesn't demand the viewer to enter into an imaginary relation with it and is realised by the absence of a gaze at the viewer. Also, this image is seen from a low angle so the viewer has less power over it. From a frontal angle, the image encapsulates the level of involvement. Moreover, it can be said that the social distance is represented here in a medium shot as the relation is represented in the business aspect of the site. The modality here is real.

Image-Text Analysis

The image-text analysis is shown in Figure A1.9 and clarified in Table A1.3.

Figure 5.9: NAB Image-Text analysis

Table A1.**3**: Text-image Relations – NAB

	Image	Text	Relationship
A	NAB Credit Card	"First class earner NAB Qantas Gold Credit Card"	Augmentation

A1.**2.3 Australian & New Zealand Bank**

ANZ history dates back over 175 years. It is found in 32 countries in Australia, New Zealand, throughout Asia and the Pacific, and in the Middle East, Europe and America. ANZ provides a range of banking and financial products and services to around 8 million customers. ANZ has employed 48,000 people worldwide.

Page Design

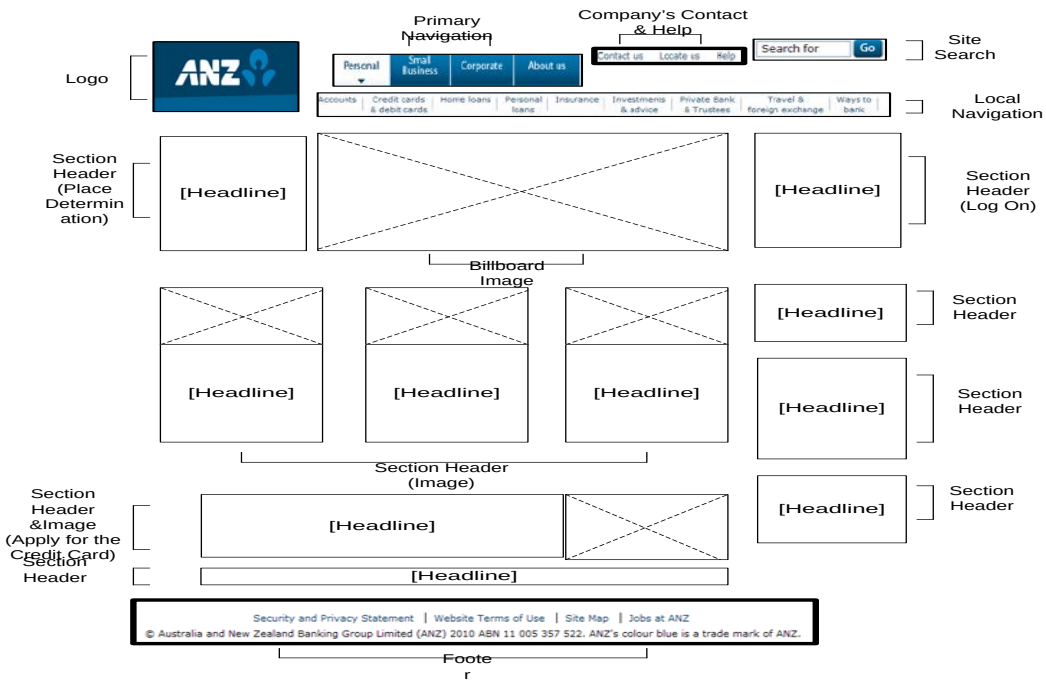
The page design in Figure A1.10 contains one image (credit card) that is connected to text at the bottom of the page, "applying for credit cards, which is associated with a primary image, positioned in the top section of the page. In the top right hand corner of the page, there are several texts. The upper most text on the right represents the (login) link. Also evident are some texts in the middle of the page which are connected to three images in three column panels signifying a relation to the bank's services (Property Info, Business Specialist and Money tracking). In addition, there is some text in the bottom right hand corner of the page which is dedicated to news and quick links.

Page Wireframe and Component

The page wireframe depicted in Figure A1.11, contains both local and global navigation schemes, a logo, site search, company contact details and help facility at the top. In addition, it contains a billboard image, also at the top of the page. In the middle of the page, there are three column panels of headlines which are connected to images. At the bottom of the page a footer is evident. Above the footer, there is a section header connected to an image that represents the module "applying for credit cards". On the right side of the page there are four section headers. The first of these four headers is the module which facilitates the (login) process.

Figure A1.**10**: ANZ Bank Page Design

Figure A1.**11**: ANZ Page Wireframe



Compositional Semantics

Home Page-Vertical Axis

In Figure A1.10, the vertical axis is relatively weak because it doesn't begin at the top of the page (first section of the site) with an image (A). However, the first area of the page (top section) does include an image of a bank debit card. Based on this representation and since it is the only image visible at the top of the page, it is considered the most ideal and most salient on the page. The image reflects what is called the promise aspect regarding the simplicity of getting money from the bank. This depicts the ideal position of the bank toward its customers. Since the bank debit card (A) is on the far right of the top section of the page, it reflects the least heavily weighted on the page. The hue of the colour in this image changes from dark black at the top of the image to a lighter hue at the bottom. The hue of this colour reflects the vector that relates to the text which comprises the second section (bottom area) of the page. A sharp line or frame separates the two areas (Photographic and Text). Six vectors lead to a text area containing information on the company, the hue of the colour in the top image (A), the hue of the background in the top image which ranges from dark blue to a lighter blue hue, the frame (line) that separates the top image from the text "VISA", the duplication of the top image (Bank Credit Card) in the bottom area of the site. The same colour used in the background of the image at the top of the page is used again in the text at the bottom of the page and again as a background in some images in the bottom section of the page. The reading path vertically, is circular. It begins with an image (Bank Credit Card) at the top of the page, then moves to the same (Bank Debit Card) image at the bottom of the page and back to top again, then to other areas on the page. The three pictures in the middle of the page mobile phone (B)-man (C)-man with a woman (D) are considered less heavily weighted than the top image however, more heavily weighted than image (E) the bank debit card at the bottom of the page.

Home Page-Horizontal Axis

In Figure A1.10, in the section to the left of the page, the mobile phone image (B) is less salient and therefore, less valued. Also, the three images next to each other (mobile phone-man-man with a woman) are considered less salient to more salient and real to ideal as the viewer moves from left to right. The image in the middle section of the page of a man pointing to a phone with his hand (C) is located at the balancing centre of this page. His fingers form a vector that guides the viewer to two other images, a (B) horizontal mobile phone-man with a woman (D). A regular reading is formed from the left-hand panel "Property information on the go" through the balancing centre, to the image on the right (D).

Field and Tenor Relations

Field Relations for the components are listed in Appendix 2A (3). Tenor Relations for the components are listed in Appendix 2B (3).

Organising Schemes

In Figure A1.12, three types of Organising Scheme, Ambiguous Metaphor-driven (A), Ambiguous Audience-specific (B) and Ambiguous Hybrids (C) are detected. In Figure A1.13, only one type of Organising Scheme, Ambiguous Task-Oriented is evident.

Figure A1.**12**: ANZ Organising Scheme (1)

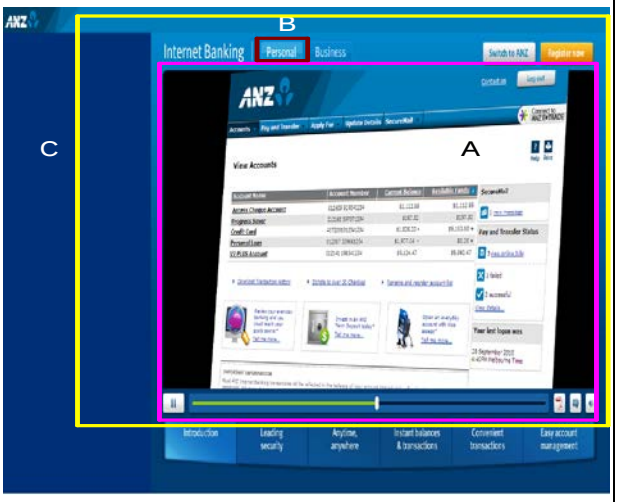


Figure A1.**13**: ANZ Organising Scheme (2)

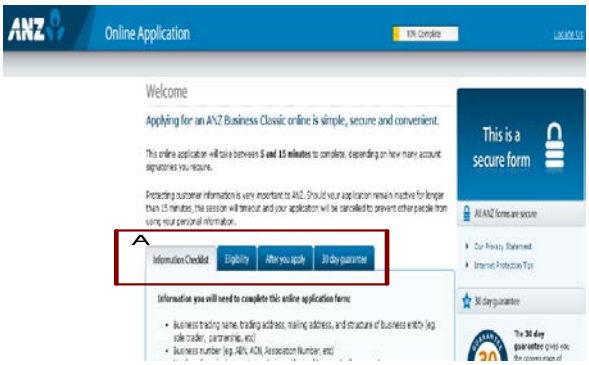


Figure A1.**14**: ANZ Image-Text analysis for Components (A...E)

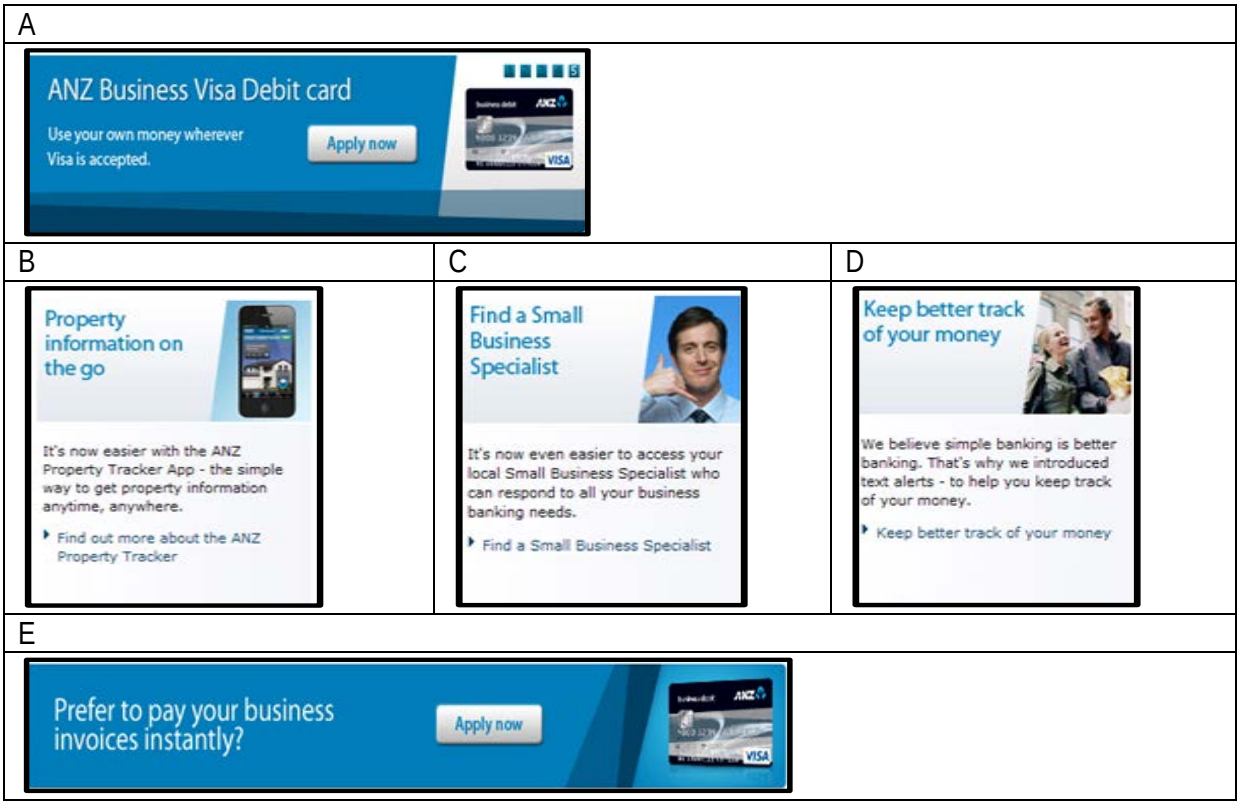


Image Analysis

In Figure A1.10, image (C) represents a visual demand as it commands the viewer to enter into an imaginary relation with it and is realised by the gaze at the viewer. Also, this image is seen from a low angle so the viewer has less power over it. From a frontal angle, the image represents the level of involvement. Additionally, the social distance is represented here in a medium shot as the relation is represented in the business aspect of the organisation. The

modality here is real.

Image-Text Analysis

The image-text analysis is shown in Figure A1.14 and clarified in Table A1.4.

Table A1**.4**: Text-image Relations - ANZ

	Image	Text	Relationship
A	ANZ Debit Card	"NZ Business Visa Debit card… Use your…."	Augmentation
B	Mobile phone with picture of the house on it	"…on the go…Tracker App…get property information…"	Exemplification
C	Man using his hand to represent the call action	"Find a Small Business Specialist… it's now even…"	Augmentation
D	Man with a woman	"Keep better track of your money… we believe…"	Divergence
E	Debit Card	"Prefer to pay…"	Enhancement

A1**.2.4 Bankwest**

Bankwest first opened its doors for business in 1895 as the Agricultural Bank of Western Australia. In 1945 it became a trading bank and over the next 50 years grew to become a market leader in its home state of WA. The name of the bank changed in 1994 to the Bank of Western Australia Ltd and started trading as Bankwest, and now has over 1 million retail customers.

Page Design

The page design in Figure A1.15 contains a main image which is positioned at the top of the page. On the right top right hand side of the page, there are texts evident that are related to advertisements about the bank. Also, three column panels of texts exist in the middle of the page, which have a relation to the bank accounts and loans products, services (international trade) and help (information and contacts). In addition to that, there are some texts in the bottom which are related to bank's quick links, latest news, and support.

Page Wireframe and Components

The page wireframe in Figure A1.16 contains a global and local navigation scheme, a logo, site search and company contact details. At the top right of the page, a column panel of the module that facilitates a login process is evident. In addition, a billboard image and a local navigation system are also present at the top of the page. In the middle of the page, there are three column panels of headlines which relate to company information, help, and services. A footer is evident at the bottom of the page. Above the footer are a local navigation system and a section header related to "latest news".

Figure A1.**15**: Bankwest Page Design

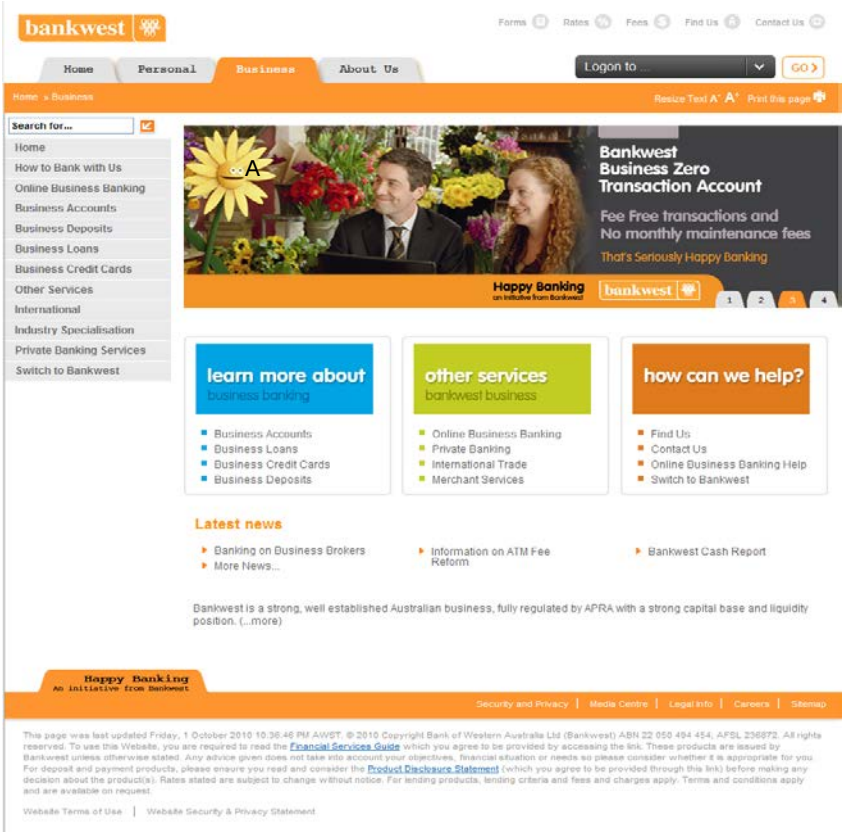
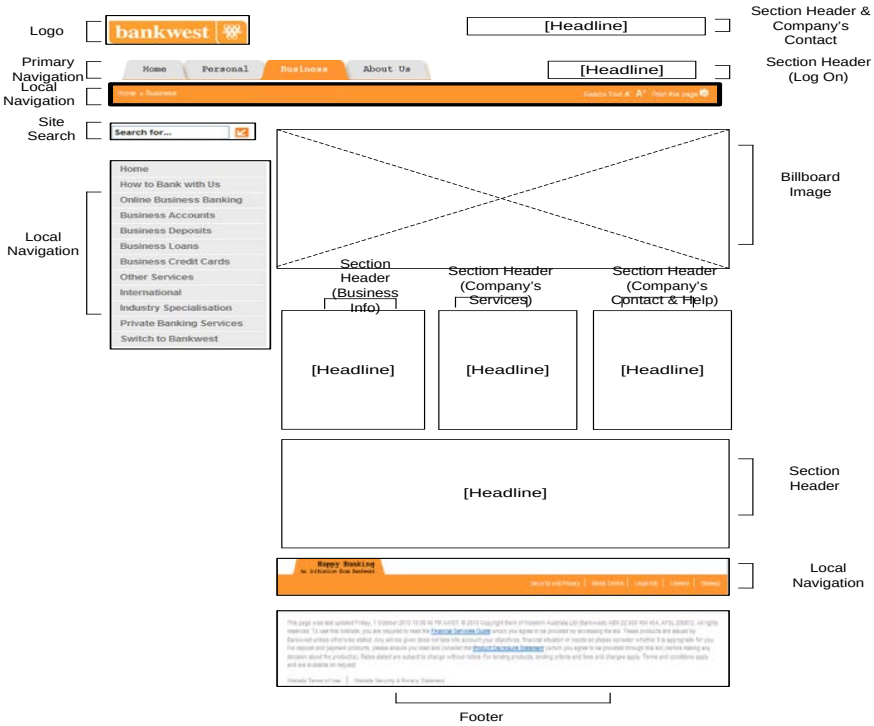


Figure A1.**16**: Bankwest Page Wireframe



Compositional Semantics

Home Page-Vertical Axis

In Figure A1.15, the vertical axis is perceived as strong because it begins at the top of the page (first area on the page) with an image (A) that is considered the most salient on the homepage. The image (a man and a woman looking toward a smiling face flower) reflects what is referred to as the promise aspect of the organisation, regarding the happiness of life through the provision of efficient services that are delivered to the customer. This depicts the ideal position of the bank towards its customers. The area of the image (smiling face flower) reflects the most heavily weighted on this page as it is positioned at the top of the page and to the far left side of the image. A variety of the colours in the image, especially a yellow colour is visible. The variety of the colours used reflects the vector that relates to the associated text which is considered the second section (bottom area) of the page. The woman's hair in this image is also considered to be a vector. Also evident is the (wide) line or frame that separates the two areas (Photographic and Text) of the page. Six vectors lead to some text (the real side) about the company, the varieties of the colours in the image at the top of the page, the face of the flower, the leaves of the smiling flower, the frame (wide line) that separates the image at the top of the page from text, the hair of the woman and the colour of the frame (orange) is also evident at the bottom of the page. The reading path vertically, is regular. It begins with the image at the top of the page (Flower) to the image of the man and woman, moving from here to the frame, then to the text and finally, to other areas of the page. The area to the right of the image (the man with woman) is considered less heavily weighted than the left area (smiling face flower) even though though they are in the same image at the top of the page, because the left side of the image is heavier than the right side.

Home Page-Horizontal Axis

In Figure A1.15, on the right side of the page, the text ("how can we help") is more salient and more valued because it is positioned to the right of the page. Additionally, the text on the left side (learn more about) is considered less salient and less valued. The text in the middle of the page (other services) which is considered in this case the balancing centre of this page, from the horizontal view, acts as a kind of vector to guide the viewer to the other texts (left and right bottom texts) on the page. The reading path horizontally, is a regular reading path moving from the text on the left side of the page, to the balancing centre and on to other areas on the page.

Field and Tenor Relations

Field Relations for the components are listed in Appendix 2A (4). Tenor Relations for the components are listed in Appendix 2B (4).

Organising Scheme

In Figure A1.17, there are three types of Organising Scheme evident. These are Ambiguous Topical (A), Ambiguous Audience-specific (B) and Ambiguous Hybrids (C). In this Image in Figure A1.18, two types of Organising Scheme, which are Exact Alphabetical (A) and Ambiguous Task-Oriented (B) are detected.

Figure A1.**17**: Organising Scheme (1)

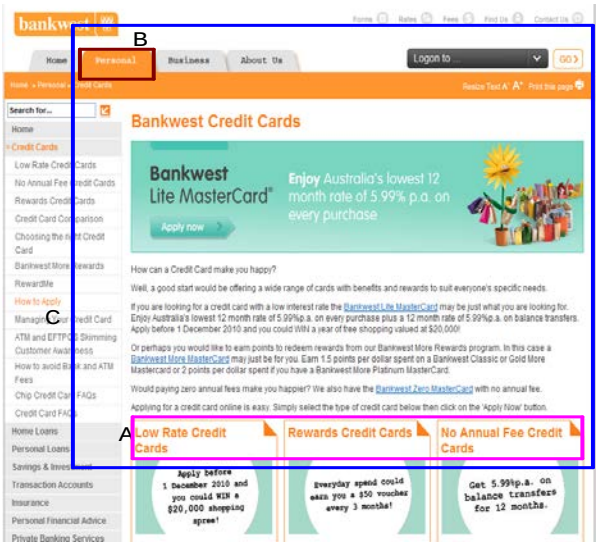


Figure A1.**18**: Organising Scheme (2)

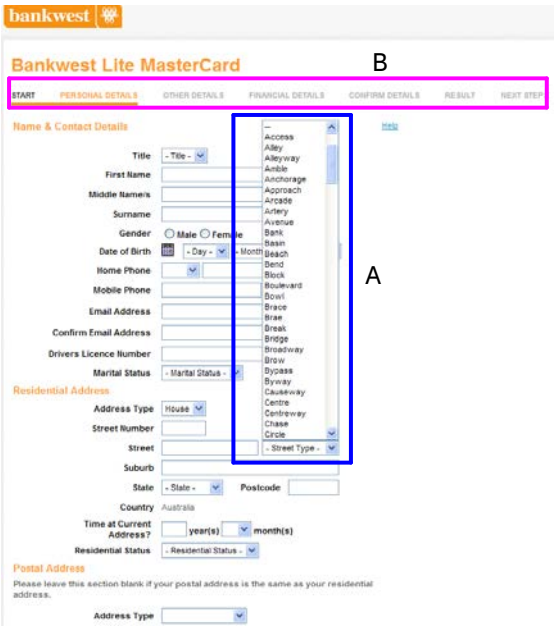


Image Analysis

In Figure A1.15, image (A) represents a visual offer as it doesn't demand the viewer to enter into an imaginary relation with the image. Also, this image is seen from a low angle so the viewer has less power over it. From an oblique angle, the level of involvement is excluded. Moreover, the social distance is represented here in a very close shot as the relation between the couples is considered to be very personal. The modality here is determined to be unreal as the face of the flower is imaginary.

Image-Text Analysis

The image-text analysis is shown in Figure A1.19 and is clarified in Table A1.5.

Figure A1.**19**: Bankwest Image-Text analysis

Table A1.**5**: Text-image Relations- Bankwest

	Image	Text	Relationship
A	Man and a woman looking toward a smiling face flower	"Bankwest…Fee Free…That's Seriously Happy Banking"	Exemplification

5.2.5 AAMI

AAMI was established in 1970 and has more than 2.5 million policyholders and millions of incoming telephone calls annually. AAMI is car, home, compulsory third party (CTP) and small business insurer.

Page Design

The page design in Figure A1.20 contains one image adjacent to the name of the company on the top left of the page. There are two section headers at the top of the page which represent quoting and online services. In the middle of the page, there is text related to a motivational advertisement which is designed to attract customers with less claims. On the right hand side of the page, one text which relates to company's news and two images that represent AAMIs welcome to customers and its services for skilled drivers is evident. At the bottom of the page there are three images connected to three texts, presented as three column panels which relate to AAMI's products and services for (Rent, Lifetime and Travel). On the left side of the page, there is some general information about the company.

Page Wireframe and Components

The page wireframe in Figure A1.21 contains a local navigation system, a logo, site search and the company's contact details at the top of the page. In addition, it contains a billboard image and a section header with an image above it. In the middle of the page, there is a section header which is represented in the module "quoting for less claim drivers". Above this, two column panels which represent two modules to 1) facilitate the process of quoting and 2) other online services is visible. At the bottom of the page, there is a footer and above this footer there are three section headers which are connected to images in three column panels which represent modules that facilitate access to company's products and services. On the right hand side of the page, two images and one section header are apparent. On the left side of the page there is a primary navigation system.

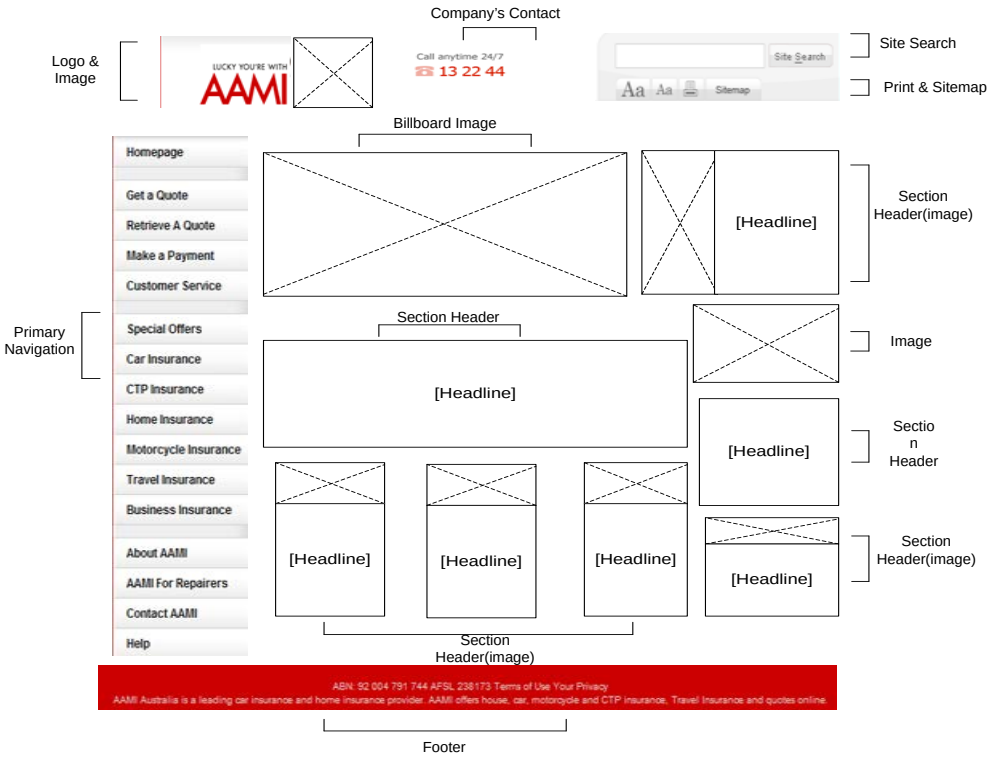
Compositional Semantics

Home Page-Vertical Axis

In Figure A1.20, the vertical axis is very strong because it begins at the top of the page (first section of the page) with an image (A) (a woman next to the "LUCKY YOU'RE WITH AAMI"). This image reflects what is called the promise aspect of good quality of customer care, representing the ideal position of the company. This image reflects the most salient on this page and the image (B) at the bottom of the page, next to "welcome to AAMI" is considered here as less salient. From top to bottom, image (A) (a woman next to the "LUCKY YOU'RE WITH AAMI") is more salient than the image of the calculator (D).

Figure A1.**20**: AAMI Page Design

Figure A1.**21**: AAMI Page Wireframe



The image of (the calculator) is however, more salient than the image of the woman next to "welcome to AAMI" (B). The image of the woman adjacent to "welcome to AAMI" (B) is in turn, more salient than the three images, house (E), car (F) and plane (G). The three images house (E), car (F) and plane (G) are more salient than the image of the road (C) at the far bottom of the page. In addition, the image (A), a woman next to the "LUCKY YOU'RE

WITH AAMI" is considered here to be the most heavily weighted because of its position in the top, far left side of the page. The representation of the colour in this image is in different degrees of the colour, red. The hue of this colour in the bottom edges of the letters (AAMI), and at the end of the woman's hair reflects the vector that relates to the text which is positioned at the bottom of the page. The line or frame that separates the two areas (Photographic & Text) is clearly evident. Four vectors lead to the text area, information on AAMI, the hue of the colour of the top image (A), the frame (line) that separates the top image from the text block, the bottom edges of the letters (AAMI), and the reuse of the same colour (red) as a background in the text.

Home Page-Horizontal axis

In Figure A1.20, to the right of the page, image (B) (positioned next to the title "welcome to AAMI") represents the most salient area of this page. The text in the middle of the page, which is considered in this case the balancing centre of the page acts as a kind of vector to concentrate attention to the right image (B) which contains an "arrow" that points to the next image and also contains the same word "AAMI". In addition, the small image of a plane (G) positioned next to "Travel Insurance" points to the image of the woman (B) which is adjacent to "Welcome to AAMI". To the left, an image of a house (E), is less salient and less valued. Also, the placement of the three images adjacent to each other (house-car-plane) is considered to move from less salient to more salient and more real to ideal when viewed from left to right. This suggests that the reading path horizontally, is a circular reading path and moves the viewer from the balancing centre (text in the middle of the page) to the image (B) on the right (next to the title "Welcome to AAMI") then back to the text again and on to other areas on the page.

Field and Tenor Relations

Field Relations for the components are listed in Appendix 2A (5). Tenor Relations for the components are listed in Appendix 2B (5).

Organising Schemes

In Figure A1.22, there is one type of Organising Scheme, Ambiguous Task-Oriented (A) evident.

Image Analysis

In Figure A1.20, image (B) represents a visual demand as it urges the viewer to enter into an imaginary relation with the company, expressed through the image of a smile directed towards the viewer. Also, this image is seen from a low angle so the viewer has less power over it and from a frontal angle, includes the level of involvement and loyalty toward AAMI. Moreover, the social distance is represented here in a medium close shot, while the modality is real (as presented in the smile on the face of the girl, connected to the text 'Welcome'.

Image-Text Analysis

The image-text analysis is shown in Figure A1.23 and is clarified in Table A1.6.

Figure A1.**22**: AAMI Organising Scheme

Figure A1.**23**: AAMI Image-Text Analysis for Components (A...G)

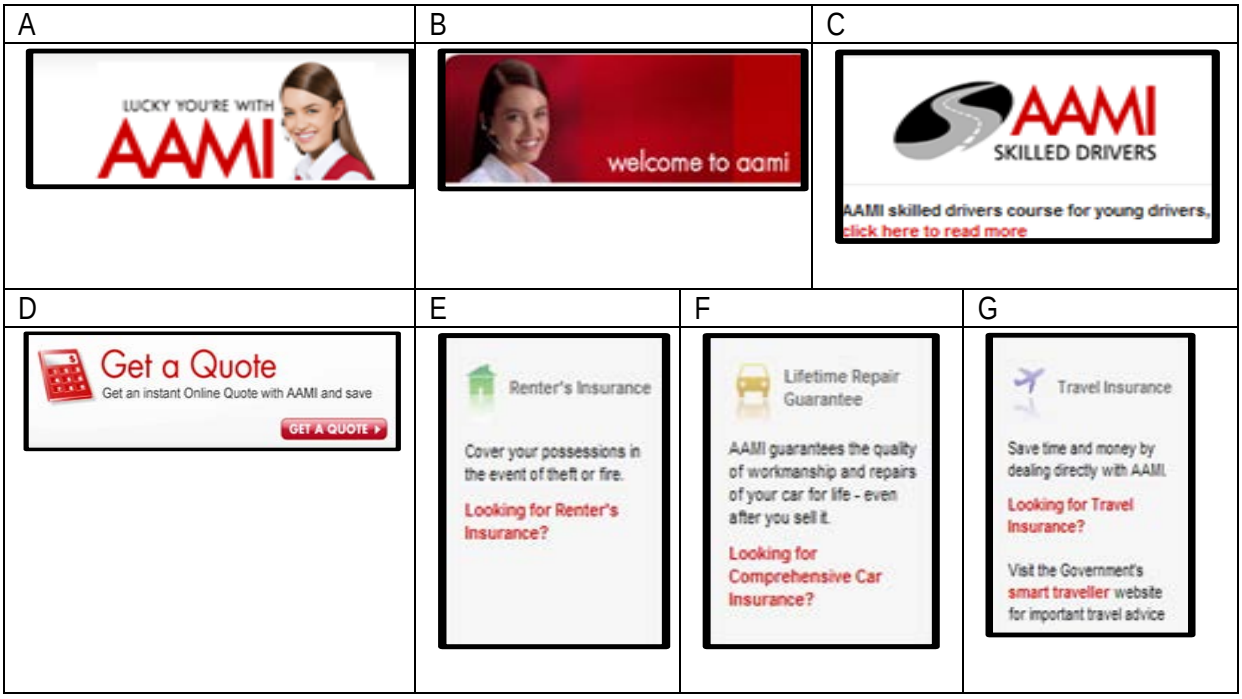


Table A1.**6**: Text-image Relations - AAMI

	Image	Text	Relationship
A	Woman smiling	"LUCKY YOU'RE WITH AAMI"	Enhancement
B	Woman smiling and ready for welcoming people	"welcome to aami"	Enhancement
C	Road	"AAMI skilled drivers course …."	Augmentation
D	Calculator	"Get an instant Online Quote …."	Augmentation
E	House	"Renter's Insurance… Cover your possessions…Looking…"	Augmentation
F	Car	"Lifetime repair …repairs of your car…"	Augmentation
G	Plane	"…Looking for Travel Insurance…"	Augmentation

A1.3 Telecommunications

A1.3.1 Dodo

Dodo was officially founded in 2001. Dodo is a telecommunication company that provides telecommunications services including Broadband, Wireless Broadband, Mobile, Fixed Line Home Phone and Dial Up. Dodo has a number of branches located across Australia. In addition to its telecommunication business, Dodo has recently started providing energy services in VIC, NSW, ACT, SA and QLD under the brand name Dodo Power and Gas.

Page Design

The page design in Figure A1.24 consists of a main image which is positioned at the top of the page. On the top left hand side of the page, there is an image of a bird that is related to Dodo's logo. Also, evident are texts in four column panels in the middle of the page, with related images which have a relation to Mobile, Broadband,Wireless Broadband and Home phone applications. In addition, there are texts in three column panels at the bottom of the page which are related to Dodo's telecommunication solutions. At the top right side of the page, there are some links, related to site search and logon.

Page Wireframe and Components

The page wireframe in Figure A1.25 contains a primary and local navigation system, a logo and site search facility. Moreover, a module which facilitates the logon services is evident at the top of the page. In addition, the page contains a billboard image at the top. In the middle of the page, four column panels of headlines, facilitating access to Dodo's products and services are evidenced. At the bottom of the page, a footer is detected and above footer, there are three modules which relate to Dodo's telecommunication solutions.

Compositional Semantics

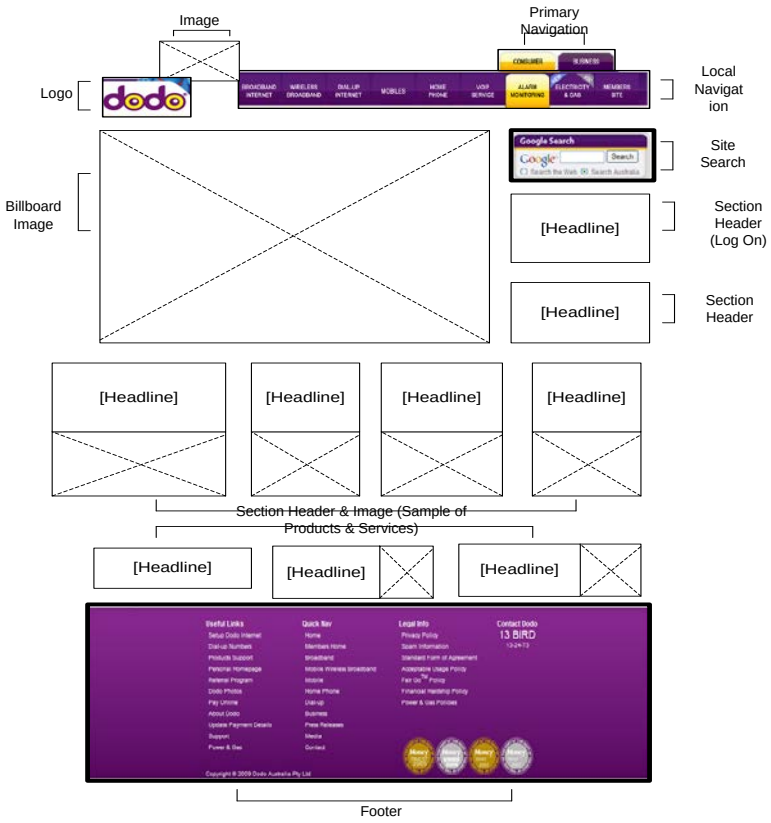
Home Page-Vertical Axis

In Figure A1.24, the vertical axis is considered strong because it begins at the top of the page (first section of the page) with an image of a bird (A) that is considered to be the most salient on the page. The image below it of a mobile phone (B) reflects what is called the "good

deal" aspects of business that the company is providing to its customers. Image (A) (bird) represents the most heavily weighted image on the page, evidenced by its position at the top far left side of the page. The hand of the bird and the edges of the purple paintings adjacent to the image, (B), a mobile phone, represent the vector that relates to the related text which is considered the second section (bottom) of the page. The sharp line or frame that separates the two sections of the page, (top and bottom) is clearly evident. Four vectors lead to the text about the company. The hand of the bird (A), the edges of purple paintings next to image (B), the image of the bird (A) and the mobile phone (B) at the top of the page are repeated again at the bottom of the page. The same colour (purple) of the background of the image at the top of the page is used again in the text and as a background colour in some of the images at the bottom of the page. The reading path vertically, is circular. It begins with the image of the bird (A) at the top left of the page, then to the bird (C) at the bottom of the page to the mobile phone (B) at the top of the page and back to mobile phone (C) at the bottom of the page and then on to other areas of the page. The mobile phone at the balancing centre on the top image (B) is considered less heavily weighted than the top image (bird) but is more heavily weighted than the other images at the bottom of the page because it is jumping out of the page.

Figure A1.**24**: Dodo Page Design

Figure A1.**25**: Dodo Page Wireframe



Home Page-Horizontal Axis

In Figure A1.24, at the right side of the page, an image of a phone and other machine (F) is more valued and is considered more ideal than the other two images on the left side of the page. Four images adjacent to each other, a bird holding a mobile phone (C), a wireless adaptor (D), VoIP machine (E) and phone with other machines (F) are considered less salient to more salient and real to ideal as the viewer moves from left to right. The image in the middle of the page, VoIP services (E) which is considered in this case the balancing centre of the page from a horizontal view acts as a kind of vector to guide the viewer to the far right image (F) (phone with other machines) and the finger of the bird, (A) is considered a vector toward the wireless adaptor image (D). The reading path horizontally, which is a circular reading path starting from the far left image (C), a bird holding a mobile phone, moving to the far right image (F) and returning to image (C) then on to the other images and areas of the page.

Field and Tenor Relations

Field Relations for the components are listed in Appendix 2A (6). Tenor Relations for the components are listed in Appendix 2B (6).

Organising Scheme

In Figure A1.26, there are four types of Organising Scheme detected, Ambiguous Topical (A), Ambiguous Audience-specific (B), Ambiguous Task-Oriented (C) and Ambiguous Hybrids (D).

Figure A1.**26**: Dodo Organising Schemes

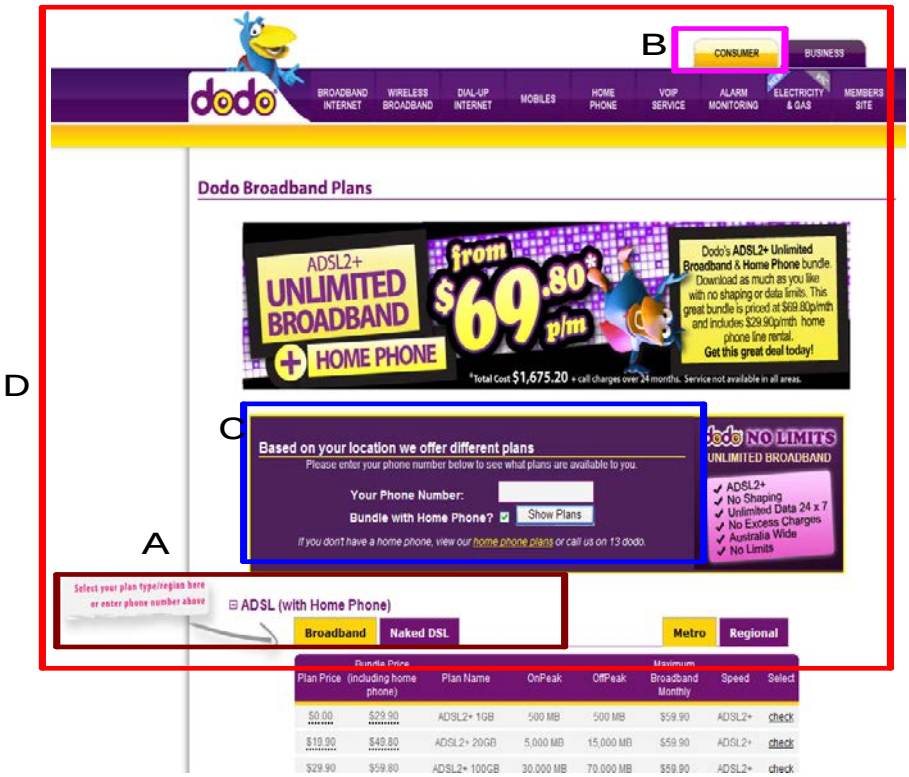


Image Analysis

In Figure A1.24, image (B) represents a visual offer of deals to viewers, but doesn't want the viewer to enter into an imaginary relation with the company. Also, this image is seen from a low angle so the viewer has less power over it and from a frontal angle, includes the level of involvement and loyalty toward the company's products. Moreover, the social distance is represented in a medium shot and the modality here is unreal as different colours used are not specific to individual and recognised products.

Image-Text Analysis

The image-text analysis is shown in Figure A1.27 and clarified in Table A1.7.

Table A1.**7**: Text-image Relations – Dodo

	Image	Text	Relationship
A	Galaxy mobile	"SAMSUNG GALAXY'S…49$…"	Augmentation
B	Bird holding a mobile phone	"Mobile…Dodo offers…"	Augmentation
C	Wireless adaptor	"Wireless Broadband…Mobile Wireless…"	Augmentation
D	VOIP machine	"VOIP Services…Delivers home…"	Augmentation
E	Alarm machine	"Alarm Monitoring…Dodo now…"	Augmentation

Figure A1.**27**: Dodo Image-Text analysis for Components (A...E)

A1.**3.2 TPG**

TPG has grown over its 20 year history of providing IT systems and services. It is considered one of Australia's largest Internet and Network Service Providers (ISPs). TPG provides a diverse range of IT products and services to residential users, businesses, SMEs, government and large corporate enterprises.

Page Design

The page design in Figure A1.28 contains an image about an ad that relates to TPG's product (ADSL) which is positioned at the top of the page. On the top left side of the page, a column panel which has links to general information about TPG. Above this is the company logo. Also, there are three column panels of texts in the middle of the page, which have a relation

to TPG's products (Home and Business) and account login. In addition, there is a large image at the bottom of the page, related to an advertisement about one of TPD's products (ADSL) which links to an advertisement at the top of the page. At the bottom of the page, there are images related to TPG deals, in addition to some links.

Page Wireframe and Components

The page wireframe evidenced in Figure A1.29 contains a company contact, a logo, and an image of an advertisement at the top. In the middle, there are three column panels of headlines which facilitate access to a subscription of TPG services and to an account logon facility. At the bottom of the page, a footer and section header are evident. To the top right of the footer is a section header which contains some page links. Also, above the footer, there are some images representing TPG deals and a main billboard image.

Compositional Semantics

Home Page-Vertical Axis

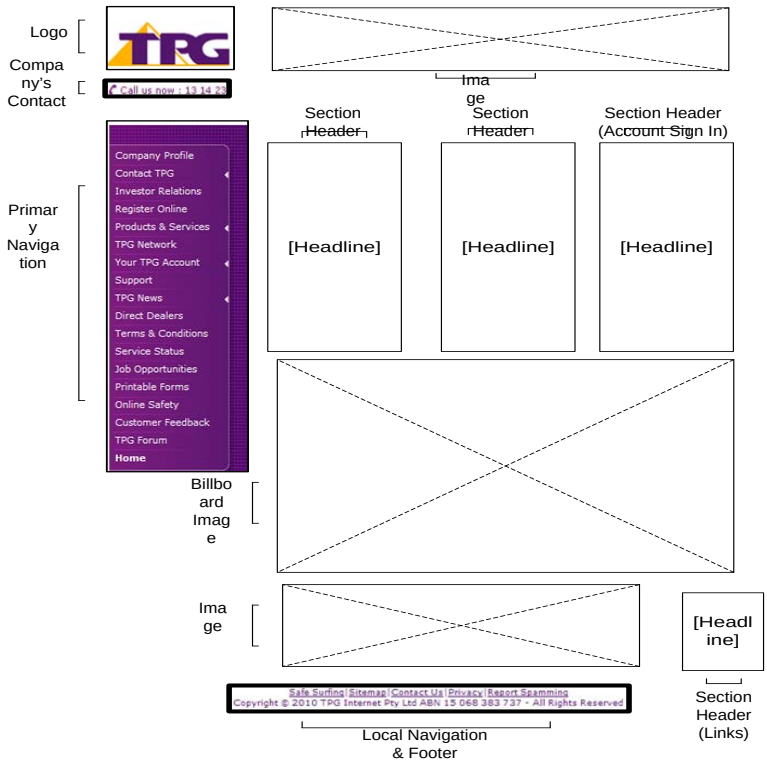
In Figure A1.28, the vertical axis is considered weak because it doesn't begin at the top of the page with a real image. The benefit of having an image in this area of the page is to reflect the service promise which represents the ideal position of the company towards its customers. The repeating of the colour purple that reflects the vector that relates to the page text, is considered the second section (bottom) of the page. A line or frame separates the two sections of the page, top and bottom. Four vectors lead to 1) text about the TPG, 2) the repeating of the colour in the top text, 3) the frame that separates the top text from the bottom text, 4) the repeating of the text "Unlimited ADSL2+ $29 p/m min charge & 509.99 WHEN BUNDLED WITH TPG HOME PHONE LINE RENTAL" as well as the same colour of the background of the text in the top section of the page being used again in the text as a background in some areas at the bottom of the page. The reading path vertically, is circular. It starts from the text at the top of the page, then moves to the same text at the bottom of the page, then back to the same text at the top of the page and on to other areas of the page. The logos, image (A), at the bottom of the page, under the title "customers liked these best sellers" are considered less heavily weighted than the text at the top of the page.

Home Page-Horizontal Axis

In Figure A1.28, at the right side of the page is a logo positioned under the title "Useful Links" (B) is the most salient and most valued. Also, logos positioned at the bottom of the page are considered less salient to more salient and real to ideal as the viewer moves from left to right. The text in the middle of the page, "Unlimited" is considered in this case, the balancing centre of the page from the horizontal view. The red and orange colour in the same text "Unlimited" acts as a kind of vector to guide the viewer to logos at the bottom of the page. The reading path horizontally is a regular reading path going from the left side logo to other logos on the page and on to other areas on the page.

Figure A1.**28**: TPG Page Design

Figure A1.**29**: TPG Page Wireframe



Field and Tenor Relations

Field Relations for the components are listed in Appendix 2A (7). Tenor Relations for the components are listed in Appendix 2B (7).

Organising Scheme

In Figure A1.30, one type of Organising Scheme, Ambiguous Task-Oriented (A) is evident.

Figure A1**.30**: TPG Organising Scheme

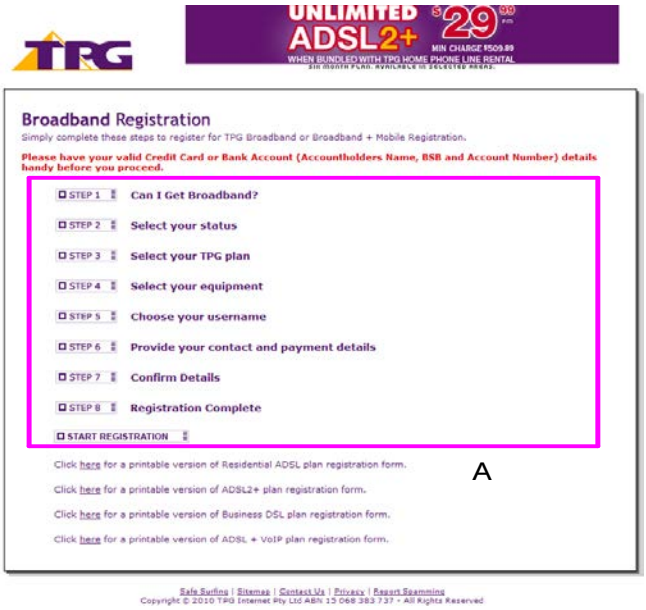


Image Analysis

In Figure A1.28, image (A) represents a visual offer, presenting TPG brands to viewers and doesn't encourage the viewer to enter into an imaginary relation with the company. Also, this image is seen from a low angle so the viewer has less power over it and from a frontal angle, includes the level of involvement. Moreover, the social distance is represented here in a medium shot and the modality is unreal.

Image-Text Analysis

The image-text analysis is shown in Figure A1.31and clarified in Table A1.8.

Table A1**.8**: Text-image Relations - TPG

	Image	Text	Relationship
A	Logos	"Customers liked these best sellers"	Augmentation
B	Sample of a link	"Useful Links"	Exemplification

Figure A1**.31**: TPG Image-Text analysis for Components (A and B)

A	B
	

A1**.3.3 Telstra**

Telstra Corporation Limited (TLS) is a provider of telecommunications and information products and services. The principal activities are provision of telephone lines, national, local, long distance, and international telephone calls, mobile telecommunications, data, internet and on-line services, wholesale, telephone directories and pay TV. TLS was formed through the merger of Telecom Australia and the Overseas Telecommunications Corp (OTC) in 1992. One third of TLS was privatised and floated in November 1997, ending the government's full ownership of the company. In June 1999, the TLS sale Bill was passed in the Senate, allowing the sale of a further 16%. International ventures include interests in China, New Zealand and Hong Kong.

Page Design

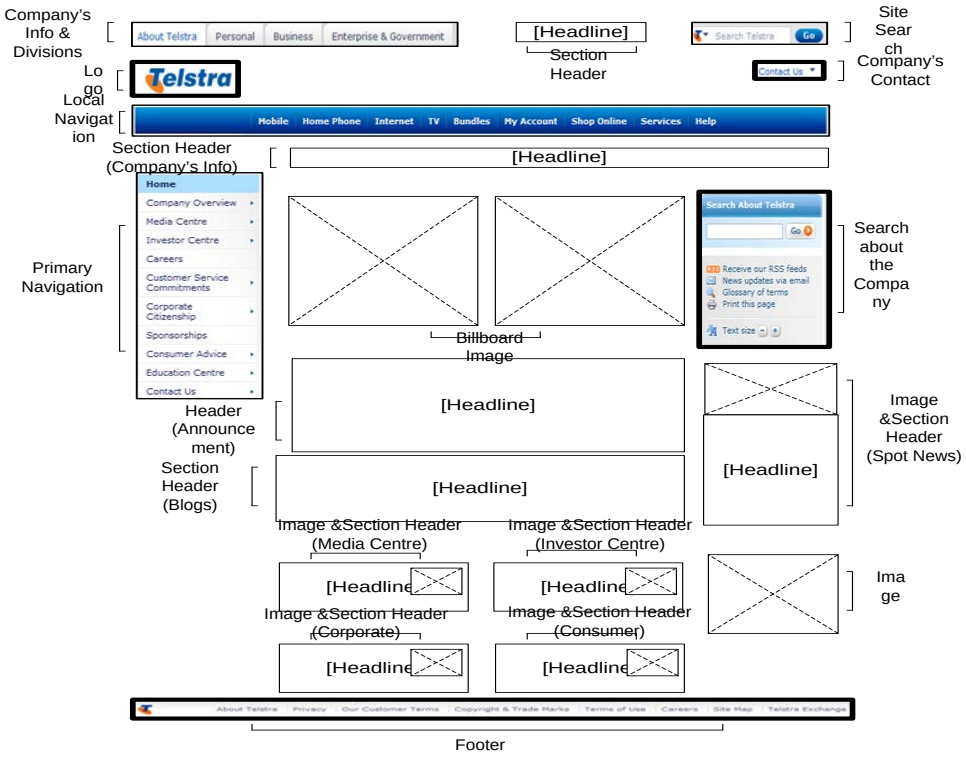
The page design in Figure A1.32 contains four images that are connected to text at the bottom of the page. This text relates to the company's Media Centre, Investor Centre, Consumer Advice and Corporate Responsibility. Moreover, at the top of the page, there is a main image and adjacent associated text. On the right side of the page, a column panel with a search facility and two other column panels with images which represent advertisement about Telstra are evident. In addition, at the top left of the page, there is a block of text related to Telstra contact details. Also evident in this region of the page is information regarding the Telstra Directory and products (Mobile, Home Phone, Internet, and TV).

Page Wire Frame and Components

The page wireframe in Figure A1.33 contains a local navigation system, a logo, site search facility and company contact details at the top of the page. In addition, there is a billboard image, a module that facilitates a search about the company and a primary navigation system. In the middle of the page, there are three sections, containing headlines. Two of the headlines, refer to Telstra announcements and blogs and the third is connected to an image that represents a Telstra advertisement. At the bottom of the page, a footer is visible. Above the footer, an image and four section headers which relate to the modules which facilitate access to Telstra information and services.

Figure A1.**32** Telstra Page Design

Figure A1.**33**: Telstra Page Wireframe



Compositional Semantics

Home Page-Vertical Axis

In Figure A1.32, the vertical axis is considered weak because it doesn't begin at the top of the page with a real image. The benefit of having an image in this area of the page is to reflect what is called the promise aspects of Telstra's service system which represents the ideal position of the company towards its customers. However, on the right side of the main image (A), there are two virtual faces which are considered here to be the most heavily weighted because of their positioning at the top of the page. The colours of the main image (blue & orange) reflect the vector that relates to the text block at the bottom of the page. A line or frame that separates the two areas of the page, (images and text) is detected. Six vectors lead to the text area, company information, the colours of the main image (A) (blue & orange), the frame (line) that separates the top image from the text, the virtual "noses" of the two virtual faces (A) that point to the bottom right side of the page (orange) and bottom left side of the page (blue), the repeated image of the two virtual faces at the top of the page and at the bottom, the end (orange) edge of the text "More Ways We're Changing" which points to the bottom area of the page. The same colour of the background of the image at the top of the page is used again in the text as a background in some sectors at the bottom of the page. The reading path vertically, is circular. It begins with the picture of the two virtual faces (A) at the top of the page, then moves to the two virtual faces image at the bottom of the page, back to the two virtual faces image at the top of the page and then on to other areas of the page. The text in the middle of the page "Latest Announcements" is considered less heavily weighted than the top image but more heavily weighted than the other images at the bottom of the page.

Home Page-Horizontal Axis

In Figure A1.32, in the left area of the page, the image next to "Media Centre" (C) is less salient and less valued. Areas are considered less salient to more salient and real to ideal when moving from left to right. The text in the middle of the page "Latest Blogs" is considered in this case the balancing centre of the page, from the horizontal view. The blue colour which is spread all over the page acts as a kind of vector to guide the viewer to the bottom images. The reading path horizontally, is a regular reading path from the left side image next to "media centre" (C) to other areas on the page.

Field and Tenor Relations

Field Relations for the components are listed in Appendix 2A (8). Tenor Relations for the components are listed in Appendix 2B (8).

Organising Scheme

In Figure A1.34, one type of Organising Scheme, Exact Chronological (A) is detected.

Figure A1.**34**: Telstra Organising Scheme

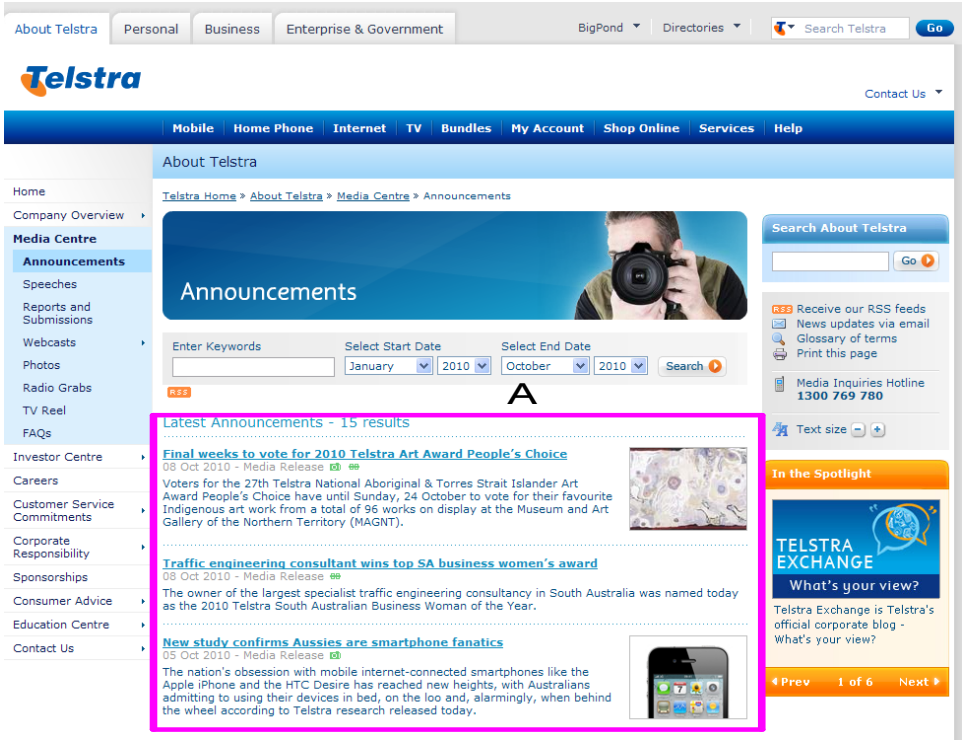


Image Analysis

In Figure A1.32 (A), this image represents a visual offer as it doesn't want the viewer to enter into a relation with the company and is enhanced by the absence of a gaze at the viewer. Also, this image is seen from low angle so the viewer has less power over it and the image is seen from an oblique angle which excludes the level of involvement. The social distance is presented here in a close shot as it represents the intimate and personal aspects. The modality here is unreal.

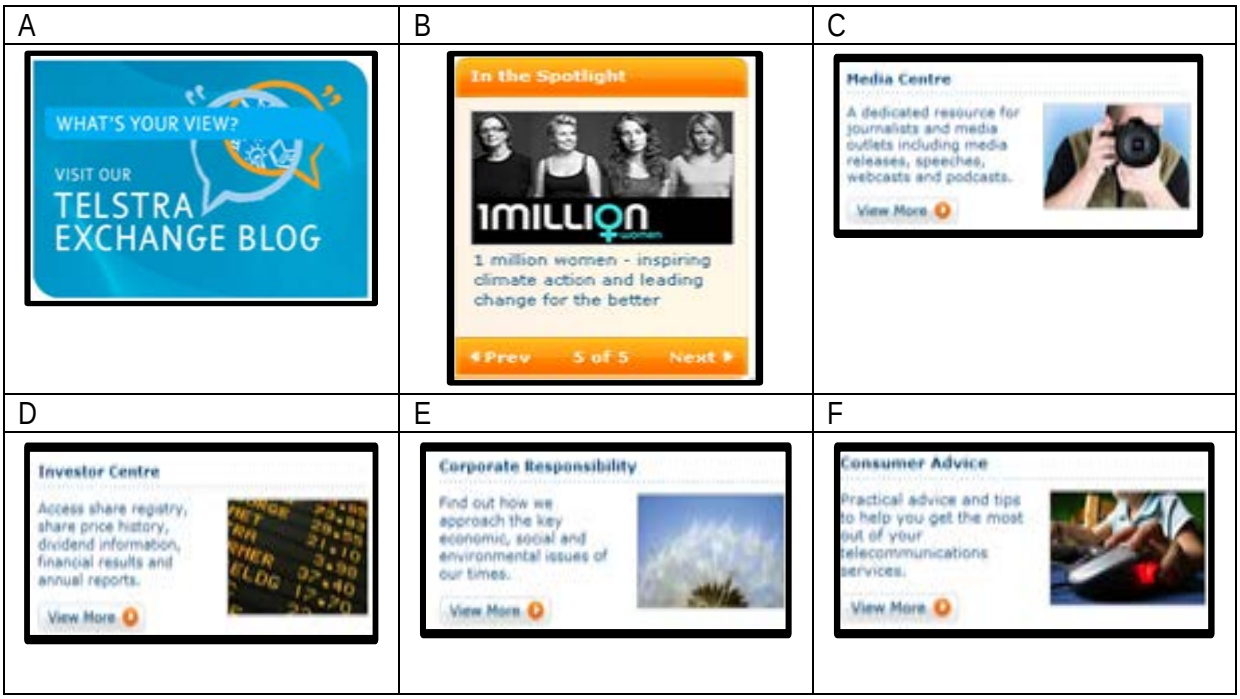
Image-Text Analysis

The image-text analysis is shown in Figure A1.35 and clarified in Table A1.9.

Table A1.**9**: Text-image Relations – Telstra

	Image	Text	Relationship
A	Two virtual faces	"WHAT'S YOUR VIEW…"	Enhancement
B	Women	"1 million women…"	Exemplification
C	Man taking photos	"Media Centre…A dedicated…media releases…"	Exemplification
D	Financial shares prices	"Investor Centre…Access share…"	Exemplification
E	Sample of the environment	"Corporate Responsibility…environmental…"	Exemplification
F	Hand holding a mouse	"Practical advice…telecommunications services…"	Exemplification

Figure A1.**35**: Telstra Image-Text analysis for Components (A...F)



A1.**3.4 Optus**

Optus is an Australian company in integrated communications. It serves more than 8.9 million customers each day. The company specialises in a broad range of communications services including mobile, local, national and long distance telephony, business network services, internet and satellite services and subscription television.

Page Design

The page design in Figure A1.36 incorporates three images in three column panels which are connected to text at the bottom of the page about Optus' offers (Broadband, Phone and Movie Rewards). A main image is positioned at the top of the page. On the right side of the page, there are some texts that are related to customer care and online services, arranged in two separate column panels. Also, there is some text at the bottom of the page which is related to Optus' products (Post-Paid, Prepaid, Home Phone, Broadband and Bundles) and general info on the company.

Page Wireframe and Components

The page wireframe in Figure A1.37 contains a local and primary navigation scheme, a logo, page search and company contact details and location finder at the top of the page. There is also a billboard at the top of the page. At the right top area of the page, three section headers representing modules which facilitate the logon, services and help facilities. In the middle of the page, three column panels of headlines, connected to images which represent some of the company's offers are also visible. At the bottom of the page, there is a footer containing modules that facilitate access to Optus' products.

Figure A1.**36**: Optus Page Design

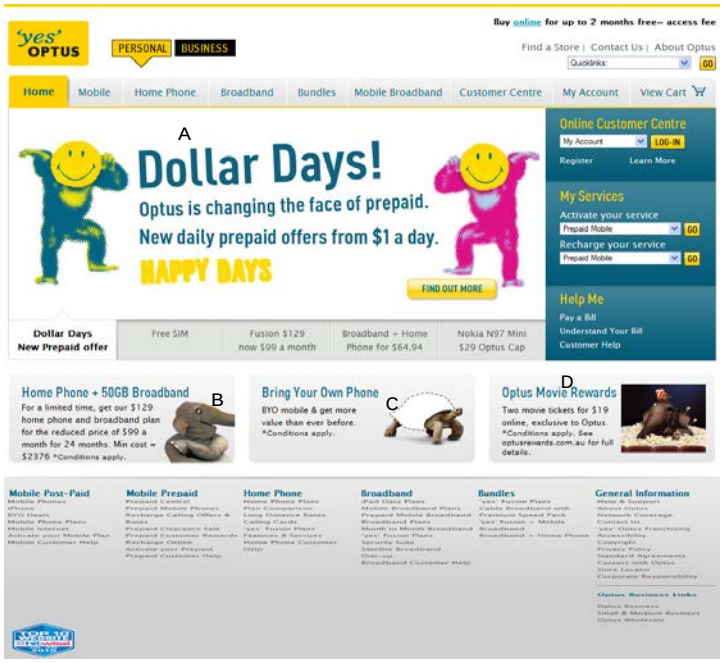
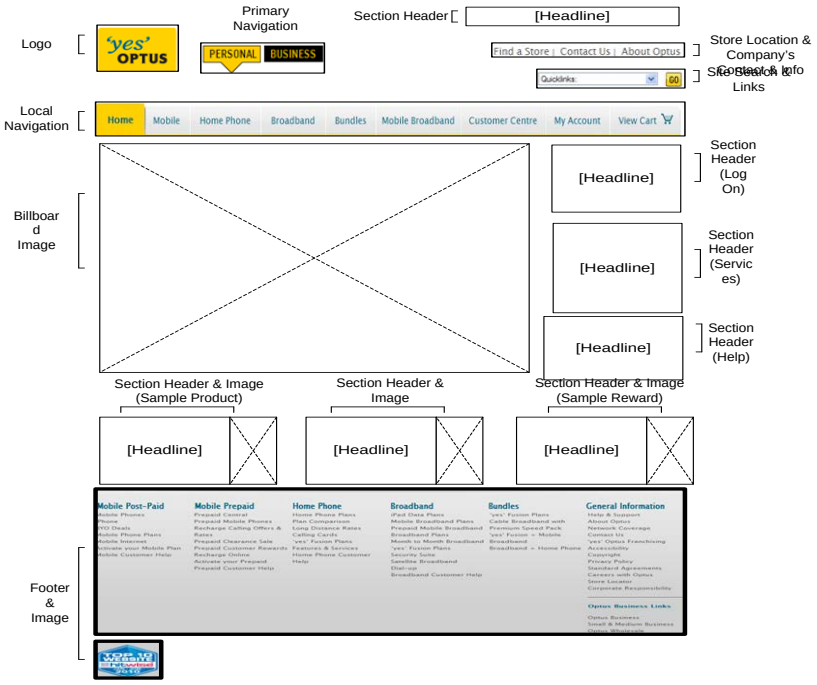


Figure A1.**37**: Optus Page Wireframe



Compositional Semantics

Home Page-Vertical Axis

In Figure A1.36, the vertical axis is considered strong because it begins on the top of the page with an image (A) that is considered the most salient and it reflects what is known as the promise aspect regarding the quality and updating of services and the products representing

the ideal position of the company towards its customers. The image reflects the most heavily weighted on this page. The colour of the image reflects the vector that relates to the text which is positioned at the bottom of the page. A line or frame that separates the two areas (top and bottom of the page) is visible. Five vectors lead to the text area (information on the company), the colour of the top image (A), the frame (line) that separates the top image from the text, the legs of the two smiling faces (A), the two smiling faces as they are repeated in a different shape, the smile of the elephant (B) and the same colour of the background of the image at the top of the page is used again in the text as a background in some images at the bottom of the page. The reading path vertically, is circular. It begins with the image of two smiling faces (A), at the top of the page, moves to the smiling elephant image (B) at the bottom of the page, then on to the two smiling faces image (A) at the top of the page then on to others area of the page. The image at the bottom of the page, smiling elephant (B) is considered less heavily weighted than the image of the two smiling faces at the top of the page.

Home Page-Horizontal Axis

In Figure A1.36, the image of the smiling elephant (B) is less salient and less valued. The three images next to each other (B, C and D) are considered less salient to more salient and real to ideal moving from left to right. The turtle (C) image in the middle of the page, which is considered in this case the balancing centre of the page from the horizontal view, acts as a kind of vector to guide the viewer to the right image (elephant in popcorn) (D). The reading path horizontally, is a regular reading path moving from the image (smiling elephant) (B) on the left side of the page, to the image (Turtle) (C) in the middle of the page, to the image (elephant in popcorn) (D) on the left of the page, then on to other areas in the page.

Field and Tenor Relations

Field Relations for the components are listed in Appendix 2A (9). Tenor Relations for the components are listed in Appendix 2B (9).

Organising Scheme

In Figure A1.38, one type of the Organising Schemes which is Ambiguous Audience-specific is evident.

Image Analysis

In Figure A1.36 (A), this image represents a visual demand as it is enhanced by a “gaze” towards the viewer. Also, this image is seen from a low angle so the viewer has less power over it and from an oblique angle which excludes the level of involvement. The social distance is presented here in a medium close shot as it represents the business aspects of the company. The modality here is unreal.

Figure A1.**38**: Optus Organising Schemes

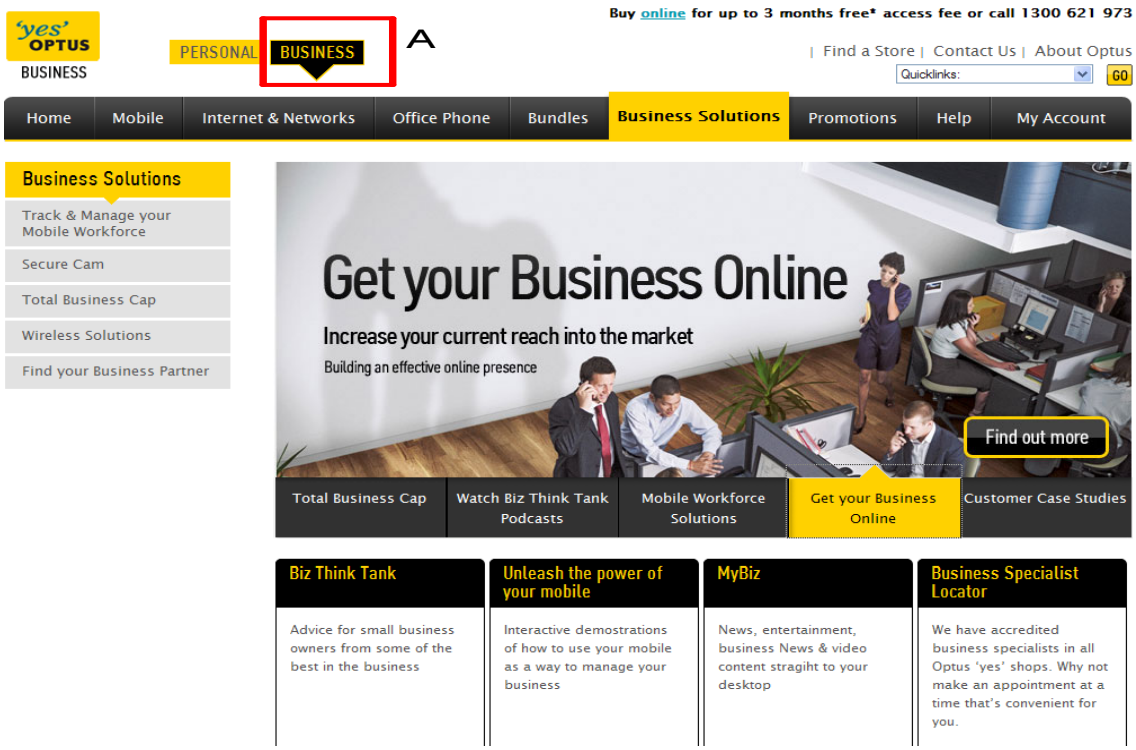


Image-Text Analysis

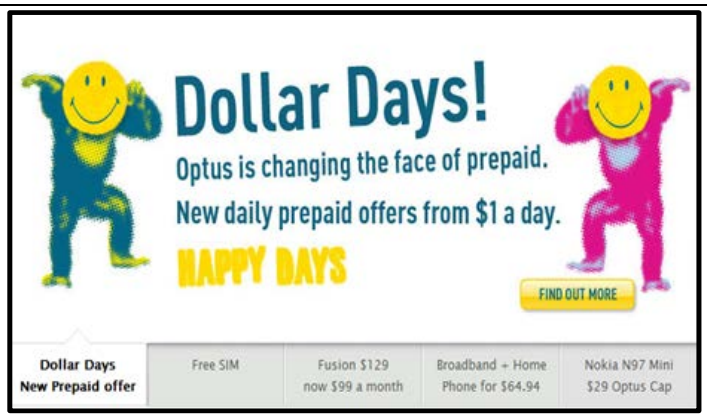
The image-text analysis is shown in Figure A1.39 and clarified in Table A1.10.

Table A1.**10**: Text-image Relations - Optus

	Image	Text	Relationship
A	Two smiling faces	"…optus is changing the face…Happy Days"	Enhancement
B	Smiling elephant	"Home Phone…For a limited time…"	Divergence
C	Turtle	"Bring your Own Phone…BYO mobile…"	Divergence
D	Elephant inside Popcorn	"…Two movie tickets …."	Augmentation

Figure A1.**39**: Optus Text-Image Analysis for Components (A...D)

A



B

C

D

A1.4 Food

A1.4.1 Dairy Farmers

Dairy Farmers was established in 1900 and produces milk and other products which are produced from milk.

Page Design

The page design in Figure A1.40 consists of one main image, containing samples of five of the company's products (Cream, Kids Products, Yogurt, Cheese and Milk) positioned at the top and in the middle of the page. Text that represents general information on the company is positioned next to the Dairy Farmer's logo.

Page Wireframe and Components

The page wireframe in Figure A1.41 contains a primary navigation system, a logo, and a section header at the top of the page. In addition, a billboard image is detected, also at the top of the page. In the middle of the page, five column panels representing headlines which facilitate the process of discovery for product samples is evident. At the bottom of the page, there is a footer detected.

Figure A1.**40**: Dairy Farmers Page Design

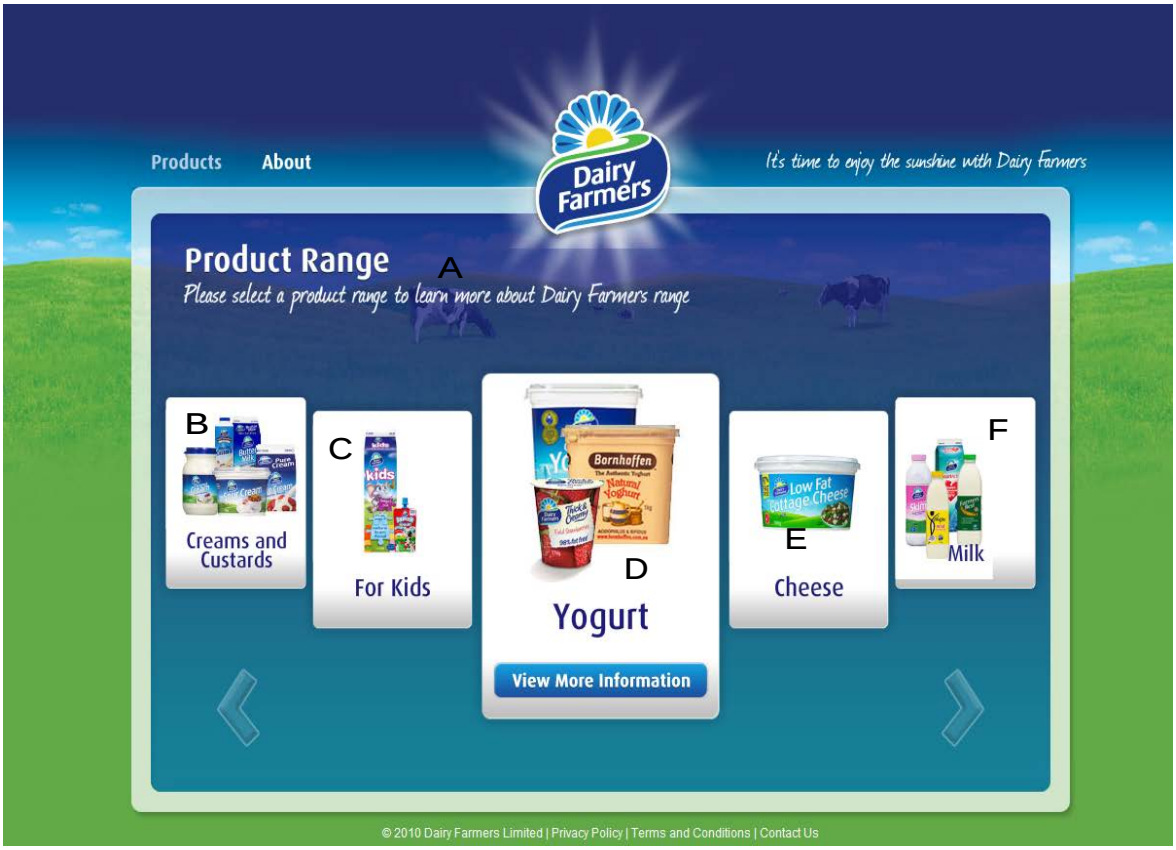
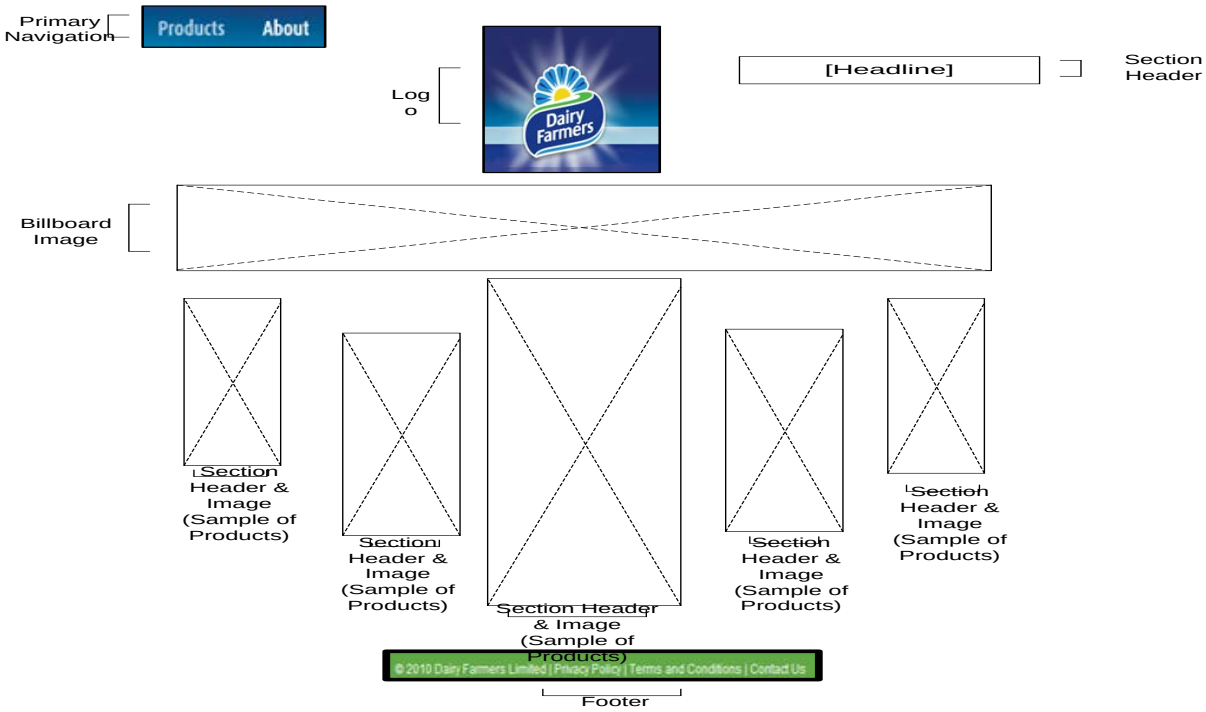


Figure A1.**41**: Dairy Farmers Page Wireframe



Compositional Semantics

Home Page-Vertical Axis

In Figure A1.40, the vertical axis is considered strong because it begins on the top of the page with an image (A), that is considered the most salient. This image represents what is known as the company promise regarding the natural and healthy nature of the dairy products to the customer, indicative of the ideal position of the company towards its customers. It represents the most heavily weighted on this page due to its position at the top of the page. It is also considered as the balancing centre of the page. The hue of the colour in the image (A) reflects the vector that relates to the images at the bottom of the page. A frame that separates the two areas of the page (top & bottom) is represented in the hue of the dark to lighter colour used in the background. Four vectors lead to information on the company (text block), the hue of the colour of the background of the image at the top of the page (two cows), the white shiny lines around the Dairy Farmers logo, the legs of the two cows in image (A) and the colours of the logo that are repeated again at the bottom of the page. The reading path vertically, is regular. It starts with the image (A) at the top of the page, moving to the bottom images and on to other areas of the page. The images at the bottom of the page, (B, C, D, E & F) (samples of Dairy Farmer's products) are considered less heavily weighted than image (A) (two cows) at the top of the page.

Home Page-Horizontal Axis

In Figure A1.40, to the right of the page, image (F) (milk) is considered more valued and is more ideal than the other four images, (B) (cream), (C) (custard-for kids), (D) (Yoghurt) and (E) (cheese) positioned to the left of the page. The five adjacent images (B, C, D, E, and F) is considered less salient to more salient and more real to ideal moving from left to right. From the horizontal view, the colour (blue) on the packet cover of the products acts as a kind of vector to guide the viewer to the next image. The reading path horizontally, is a circular reading path starting from image (D) (yoghurt), which is considered here the balancing centre, moving to the images on the right side of the page, returning to the balancing centre then to other areas of the page.

Field and Tenor Relations

Field Relations for the components are listed in Appendix 2A (10). Tenor Relations for the components are listed in Appendix 2B (10).

Organizing Scheme

In Figure A1.42, three types of Organising Scheme, Ambiguous Topical (A), and Ambiguous Audience-specific (B) and Ambiguous Hybrids (C) are detected.

Figure A1.**42**: Dairy Farmers Organising Scheme

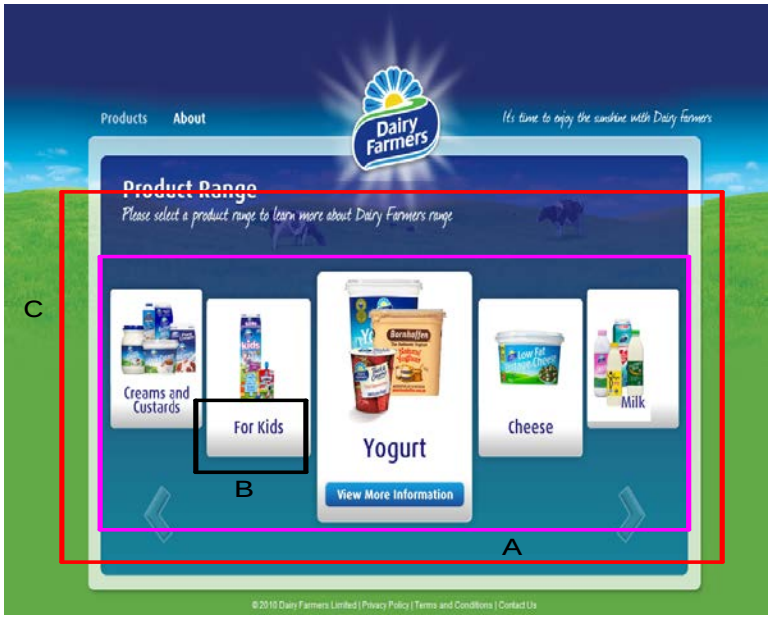


Image Analysis

In Figure A1.40, image (A) represents a visual offer, enhanced by the absence of gaze at the viewer. Also, this image is seen from a low angle so the viewer has less power over it and from an oblique angle which excludes the level of involvement. Moreover, the social distance is represented here in a long shot, representing the public aspects. The modality here is unreal as the colour of the grass and the sky are only just visible.

Image-Text Analysis

The image-text analysis is shown in Figure A1.43 and clarified in Table A1.11.

Figure A1.**43:** Dairy Farmers Image-Text Analysis for Components (A...F)

A				
				
B	C	D	E	F
				

Table A1**.11**: Text-image Relations - Dairy Farmers

	Image	Text	Relationship
A	Two cows	"Product…Dairy Farmers…"	Augmentation
B	Bottle of Creams & Custards	"Creams and Custards"	Exposition
C	Milk with the word "Kids" on its cover	"For Kids"	Exemplification
D	Bottle of Yogurt	"Yogurt…View More Information…"	Augmentation
E	Bottle of Cheese	"Cheese"	Exposition
F	Bottle of Milk	"Milk"	Exposition

A1**.4.2 Parmalat**

Parmalat was established in 1923 as a small business specialising in selling ice cream. Today, Parmalat is a dairy product manufacturing company which specialises in selling milk and other milk products and has 1,450 employees. Parmalat is ranked 352 in the top 2000 Australian companies. In 1998, it launched a joint venture with an Italian company.

Page Design

The page design in Figure A1.44 consists of four images that are connected to text underneath which represents information on some of the company's products (Children Products, Recipes, Students Promotions and Delivery Products). Moreover, there is a main image which is positioned at the top of the page that consists of several components (Happy Family images). On the right side of the page, there is an advertisement consisting of images that represent a Parmalat product. On the left side of the page, some images related to Parmalat's brands (Skinny Milk etc) are visible. In the middle of the page, a text block providing which general information about the company is present.

Page Wire Frame and Components

The page wireframe in Figure A1.45 contains a local navigation system and a logo. In addition, a billboard image and primary navigation scheme are detected at the top of the page. In the middle of the page, it has one sections of headline. On the bottom of the page, it has a footer and above this footer there are two column panels which have four images with their texts which facilitate the process of discovery of company's products. On the right side of the page, we can see a column panel which has an image of a sample of products and three sections of headers. On the left side, we can see a column panel with images which represent a sample of company's brands.

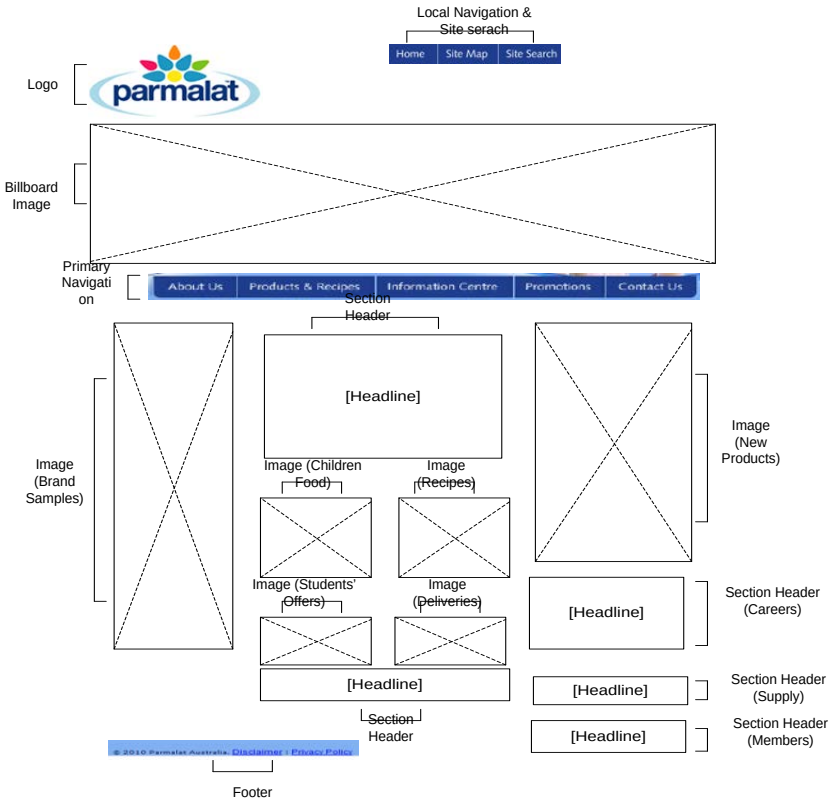
Compositional Semantics

Home Page-Vertical Axis

In Figure A1.44, the vertical axis is very strong because it begins at the top of the page with an image (A) that comprises several components. This image reflects what is known as the promise aspects of the company and represents the ideal position of the company towards its customers. This image also represents the most salient image on the page. On this same image, the picture positioned on the left hand side of the image (husband with his wife holding their children) is considered to be the most heavily weighted because of its position **.**

Figure A1**.44**: Parmalat Page Design

Figure A1**.45**: Parmalat Page Wireframe



on the far left of the image. The hue of the colour of the image (blue) reflects the vector that relates to adjacent text at the bottom of the page. A sharp broken line or frame separates the two areas (image and text). Eight vectors lead to the text area (information on the company), the hue of the colour of the top image, the frame (sharp broken line) that separates the top image from the text, the green bottle which is held by the small boy in the third picture in the image, the legs of two children in the first picture, the teeth of a woman in the fourth picture, the knees of the "flying girl" in the fourth picture, the picture of a small boy in the third picture, which is used again in a similar situation in the picture above "Food for children" (C) and the same colour of the background of the image at the top of the page is used again in the as a background colour in some areas at the bottom of the page. The reading path vertically, is circular beginning with the picture on the left side of the image at the top of the page (husband with his wife holding their children) (A) to the other pictures in the same image (the small boy) to the image above "Food for children" (C) then to the third picture (small boy holding a green bottle) and on to other areas of the page. The text in the middle of the page, "Parmalat-Milk…" is considered less heavily weighted than the image at the top of the page, however, is more heavily weighted than the images positioned at the bottom of the page.

Home Page-Horizontal Axis

In Figure A1.44, in the area to the left of the page, image (B) "Our Brands" is less salient and less valued than the image to the right, "what is new". Images are considered less salient to more salient and real to ideal reading from left to right. The four images in the middle of the page "Food for Children" (C), "Recipes" (D), "Students" (E), and "Home Delivery" (F) are

considered in this case, the balancing centre of the page from a horizontal view. The white background in the four images and the head and the tail of the cow in the image above "Students" (E) acts as a kind of vector to guide the viewer to the other images on the page, from a horizontal view. The reading path horizontally, is a regular reading path moving from the left side image "Our Brands" (B) to the four images in the middle of the page to the right image "what is new" then on to other areas on the page.

Home Page-Banner Image Analysis (A)

In Figure A1.44, picture (husband with his wife holding their children) positioned to the left in the image is the most heavily weighted because of its position at the top and to the far left of the image. Moving from the left to the right, the transfer process of the real to the ideal aspects of the page are detected. Also, moving from the left to the right, the less salient (husband with his wife holding their children) to the most salient (woman smiling drinking milk) image is evident. The image of the girl flying represents what is referred to as the balancing centre of the whole image. The knees of the girl are considered a vector toward the bottom of the page. The pictures on this main image are separated from the left to the right by sharp lines and frames. In each picture on this main image, a vector pointing toward the next picture is detected. The elbow of the girl (daughter) and the hand of the mother in the picture (husband with his wife holding their children) are vectors to the mother holding her very small baby picture. The very small baby in the (mother holding her baby) picture is a vector to the next picture (small boy holding green bottle). The elbow of the small boy in the picture (small boy holding green bottle) is a vector to the (woman smiling) picture. The teeth of the (woman) in the picture (woman smiling) is a vector to the last picture (old man and old woman smiling) and the teeth of the old woman in the picture (old man and old woman smiling)is also a vector to the final picture, woman smiling drinking milk. The reading path of this image is a regular reading path starting from the picture on the left of the image (husband with his wife holding their children) to the following pictures in the same image and on to other areas of the page.

Field and Tenor Relations

Field Relations for the components are listed in Appendix 2A (11). Tenor Relations for the components are listed in Appendix 2B (11).

Organising Scheme

In Figure A1.46, one type of Organising Scheme, Ambiguous Audience-specific is detected.

Figure A1.**46**: Parmalat Organising Scheme

Image Analysis

In Figure A1.44, image (A) represents a visual demand because it is enhanced by a gaze at the viewer. Also, this image is viewed from a low angle so the viewer has less power over it and from frontal angle which includes the level of involvement. The social distance is presented here in a close shot that represents personal and intimate aspects of involvement. The modality here is real, however, is not situated in a setting.

Image-Text Analysis

The image-text analysis is shown in Figure A1.47 and clarified in Table A1.12.

Figure A1**.47**: Parmalat Image-Text Analysis for Components (A...F)

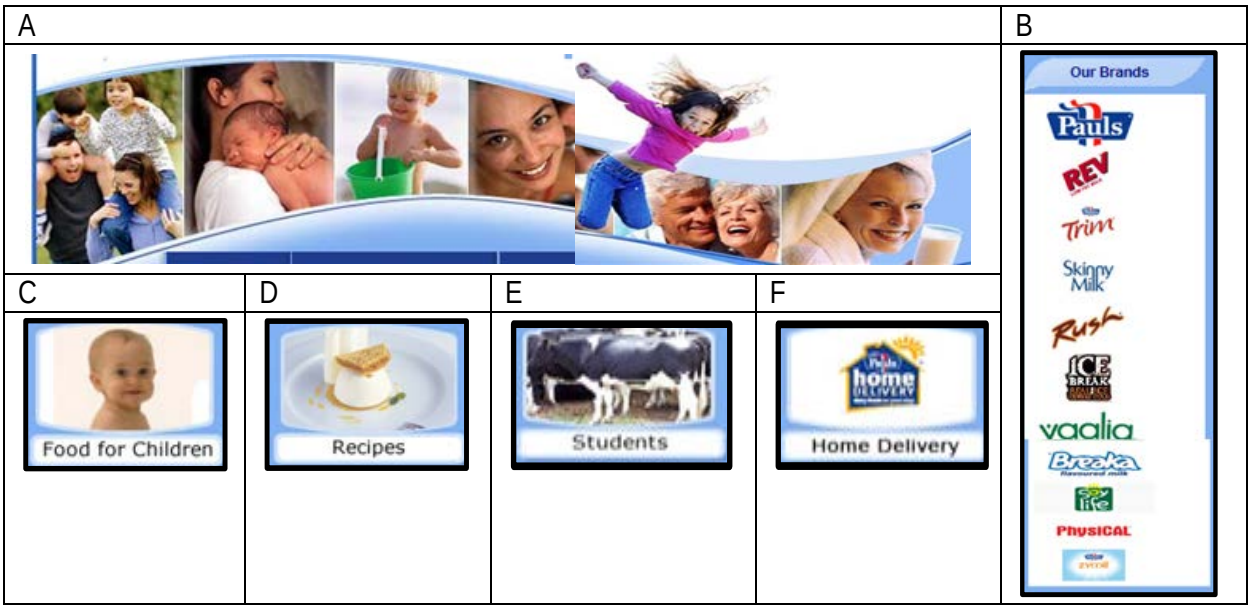


Table A1**.12**: Text-image Relations – Parmalat

	Image	Text	Relationship
A	Different areas of smiling family members	No Text	Homospatiality
B	Different brands	"Our Brands"	Exemplification
C	Small boy	"Food for Children"	Augmentation
D	Sample of cake	"Recipes"	Exemplification
E	Cows	"students"	Divergence
F	Sign of home DELIVERY	"Home Delivery"	Exposition

A1**.4.3 Fleurieu Milk**

Fluerieu Milk started as a small business in 1938 at the Roslyn Vale property in South Australia. It was officially established with its current name in 2003. The company produces milk and other milk-based products. Fleurier Milk is involved in a joint venture with 'Monjava Coffee'. This joint venture enabled the company to produce other products aside from traditional milk such as 'Iced Coffee' and 'Chocolate Milk'.

Page Design

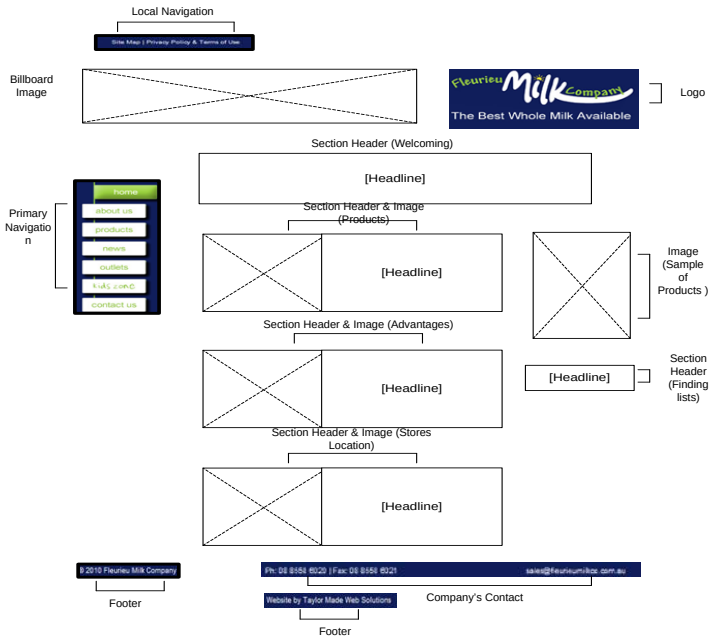
The page design depicted in Figure A1.48 contains one image (samples of company's products) which is connected to text at the bottom of the page. A primary image, positioned at the top of the page is detected. On the right side of the page, there is an image which is connected to text relating to the company's 'ICED COFFEE' product and a link which represents the products' lists. In the middle of the page, there are two images connected to related text which represent samples of the company's product (Milk). Above these two images, there is a welcoming text referring to the freshness of the company's products. To the left side of the page, a column panel of texts that relate to general info about the company (about us, products, news, outlets, kids zone and contact us) is visible.

Page Wireframe and Components

The page wireframe in Figure A1.49 contains a local navigation system and a logo at the top of the page. In addition, the wireframe contains a billboard image, also positioned at the top of the page. In the middle of the page, two sections of headlines connected to images representing samples of products are detected. The footer is visible at the bottom of the page. Above this footer there is a section header connected to an image representing samples of products. On the right hand side of the page, a column panel of an image that facilitates access to a sample of products is visible. On the left hand side of the page there is a primary navigation system.

Figure A1**.48:** Fleurieu Milk Page Design

Figure A1.**49**: Fleurieu Milk Page Wireframe



Compositional Semantics

Home Page-Vertical Axis

In Figure A1.48, the vertical axis is considered strong because it begins at the top of the page with an image (A) that is considered the most salient. This image reflects what is known as the promise aspect of the company, providing the variety of dairy products of good quality to satisfy their customers' needs. This image reflects the most heavily weighted on the page as it is positioned at the far left, top section of the page. The variety of the products' colours on the image is clear. The variety of colours used reflects the vector that represents the bottom of the page. A line or frame that separates the two sections of the page (top and bottom). Four vectors lead to the bottom of the page, the variety of the colour in the top image (A), the frame that separates the top image from the bottom of the page, repeating of the same products in two images at the bottom of the page, (the image next to "Iced coffee" (E) and the image next to "Buying Fleurieu Milk" (D)), repeating of the grass in image (B) (two cows). The reading path vertically, is circular, beginning with the image (A) at the top of the page, then to the image next to "Buying Fleurieu Milk" (D) back to the image adjacent to "Iced coffee" (E), then on to other areas of the page. The picture in the middle (a boy drinking milk) (C) is considered less heavily weighted than the images at the top of the page, but is more heavily weighted than the image at the bottom of the page.

Home Page-Horizontal Axis

In Figure A1.48, to the right of the page, the image next to "Iced coffee" (E) is considered more salient and valued. The text in the middle of the page, "Quality milk products" (B) is considered the balancing centre of the page from a horizontal view. The colour of the cow (brown) acts as a vector because it is repeated in the image adjacent to "Iced coffee" (E). The reading path horizontally is a regular reading path moving from the image (cow) on the left, to the image on the right, next to "Iced coffee" (E), then on to any other areas on the page.

Field and Tenor Relations

Field Relations for the components are listed in Appendix 2A (12). Tenor Relations for the components are listed in Appendix 2B (12).

Organising Scheme

In Figure A1.50, two types of Organising Scheme, Exact Alphabetical (A) and Ambiguous Audience-specific (B) at detected. In Figure A1.51, one type of Organising Scheme, Ambiguous Topical (A) is visible.

Image Analysis

In Figure A1.48, the image (C) represents a visual demand which is enhanced by a gaze at the viewer and it demands that the viewer enter into an imaginary social relationship with it. This image is viewed from a low angle so the viewer has less power over it and from a frontal angle which includes the level of involvement. The social distance is presented here in a close shot, representing the personal aspects of the company. The modality is real.

Image-Text Analysis

The image-text analysis is shown in Figure A1.52 and clarified in Table A1.13.

Figure A1.**50**: Organising Scheme (1)

Figure A1.**51**: Organising Scheme (2)

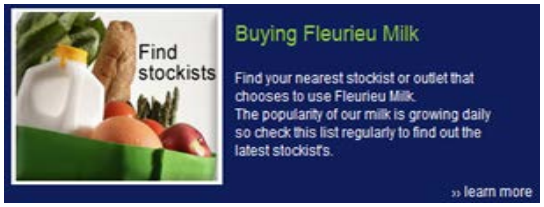
Figure A1.**52**: Fleurieu Milk Image-Text analysis for Components (A...E)

A

B

C

D



E

Table A1.**13**: Text-image Relations in Fleurieu Milk

	Image	Text	Relationship
A	Variety of Products	No Text	Homospatiality
B	Cows	"Quality milk products…All Fleurieu…"	Enhancement
C	Child drinking milk	"The best milk available… Goodness for your family"	Augmentation
D	Sample of stockists	"Find stockists…Buying Fleurieu Milk… find your nearest…"	Exemplification
E	Fleurieu ICED COFFEE	"Fleurieu ICED COFFEE… like you've never tasted…"	Augmentation

A1.5 Transport and Tourism

A1.5.1 Murrays

Murray's transport was established in 1966. Murray's provides express services for passengers as well as coach, bus and limousine hire for large & small groups. Murray's employs 400 staff and drivers and has 2000 vehicles in its fleet.

Page Design

The page design in Figure A1.53 contains text that represents express services offered by the

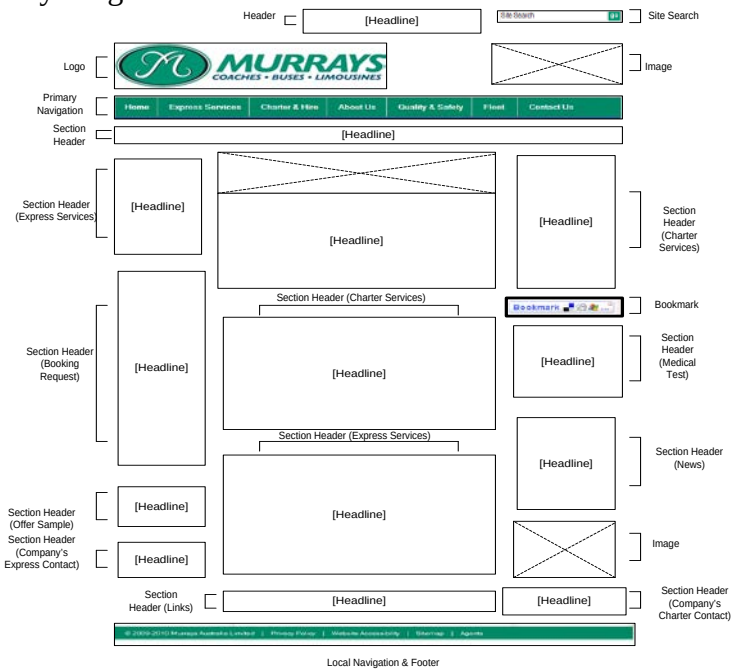
company at the bottom of the page. A main image (sample of Coaches) is positioned at the top of the page. On the right side of the page, texts related to Charter services (Tours, Inbound Tourism…) offered by the company and latest news are detected. There are some texts on the left of the page related to express and booking services, and special offers. In the middle of the page, texts related to Charter and Hire services are also evident.

Figure A1.**53**: Murrays Page Design

Page Wireframe and Components

The page wireframe in Figure A1.54 contains a primary navigation system, a logo, site search facility and header positioned at the top of the page. There is also a billboard image visible in this area of the page. In the middle of the page there is a headline text. Visible at the bottom of the page is a footer and above the footer, a section header which enables access to express services. On the right hand side of the page, column panels of headers facilitating access to some of Murray's services and latest news are evident. On the left hand side of the page, two column panels of headers which relate to a booking facility and special offers are detected.

Figure A1.**54**: Murrays Page Wireframe



Compositional Semantics

Home Page-Vertical Axis

In Figure A1.53, the vertical axis is considered strong because it begins at the top of the page with an image (A) (bus) that is considered the most salient on the page. This image represents the company promise regarding the availability of an efficient fleet of buses which reflects the ideal position of the company toward its customers. This image represents the most heavily weighted on the page due to its position at the top of the page. The colour (green) on the image is repeated all over the page. The hue of this colour reflects the vector that relates to the text at the bottom of the page. Visible is a line or frame that separates the two sectors of the page (image and text). Five vectors lead to a text area representing information on the company, the hue of the colour (green) in the top image, the frame (line) that separates the top image from the text, the repeating of the green colour all over the page, the same colour of the background in the image at the top of the page is used again in the text at the bottom of the page as a background, and in the two mirrors of the image (A) (bus) at the top of the page. The reading path vertically, is regular, beginning with the image of the bus at the top of the page, moving to the frame, then to image (B) (bus on the road), then on to other areas of the page. The image of the bus on the road (B), is considered less heavily weighted than the of the bus (A), at the top of the page, but is more heavily weighted than image (C) (hand with sand) at the bottom of the page.

Home Page-Horizontal Axis

In Figure A1.53, image (C) (hand with sand), positioned to the right of the page is considered more salient and more valued. Images are considered less salient to more salient and real to ideal when moving from left to right of the page. The text in the middle of the page, (Charter and Hire Services) is considered in this case, the balancing centre of the page from a horizontal view. Repeating of the green colour acts as a kind of vector to guide the viewer to image (C) (hand with sand) on the right side of the page. The reading path, horizontally is a regular reading path moving from the left side texts to the image (hand with sand) on the

right, to other areas on the page.

Field and Tenor Relations

Field Relations for the components are listed in Appendix 2A (13). Tenor Relations for the components are listed in Appendix 2B (13).

Organizing Scheme

In Figure A1.55, four types of Organising Scheme, Exact Chronological (A), Ambiguous Task-Oriented (B), Ambiguous Topical (C) and Ambiguous Hybrids (D) are detected.

Figure A1.**55**: Murray's Page Organising Scheme

Image Analysis

In Figure A1.53 (B), this image represents a visual offer as it is enhanced by absence of gaze at the viewer and as it doesn't demand that the viewer enter into an imaginary social relation with them. Also, this image is seen from low angle so the viewer has less power over it and the image is seen from frontal angle which includes the level of involvement. Moreover, we can say that the social distance is represented here in a long shot as it represents the public aspects and the modality here is real.

Image-Text Analysis

The image-text analysis is shown in Figure A1.56 and clarified in Table A1.14.

Figure A1**.56**: Murray's Image-text analysis for Components (A...B)

A	B
	

Table A1**.14**: Murray's Text-image Relations

	Image	Text	Relationship
A	Bus on the road	"Murray Coaches…tours, transfers…"	Augmentation
B	Tree with sand on hand	"MURRAYS have always been GREEN"	Enhancement

A1**.5.2 Platinum Australia**

Platinum Australia was incorporated in 2005. Platinum specializes in offering business leads, contacts and planners and is considered to be a one stop shop for Australian destination advice, suggested and tailored itineraries and destination management to enhance all necessary travel arrangements. In addition, Platinum offers services of capitalising and enhancing business tourism opportunities to Australia from key markets such as India and other identified countries. Moreover, this company develops plans for conference organisers and travel agents.

Page Design

The page design in Figure A1.57 incorporates a main image (Map of some cities in Australia) on the left side of the page, with another two images adjacent to it (Bridge and two couples gathering together), positioned at the top of the page. Above this image, are texts which explain some of the activities of the company (Visiting the Opera House…etc). At the bottom of the page, a primary text written by the founder and owner of the company which explains the general position of the company's plans and activities is evident. Next to this text, from the left, there are two images of a dining table ready to be used in front of a lake, positioned above an image of a couple standing in front of the same lake. At the bottom of the page, information about the company's copy right and the privacy policies are detected.

Figure A1.**57**: Platinum Australia Page Design

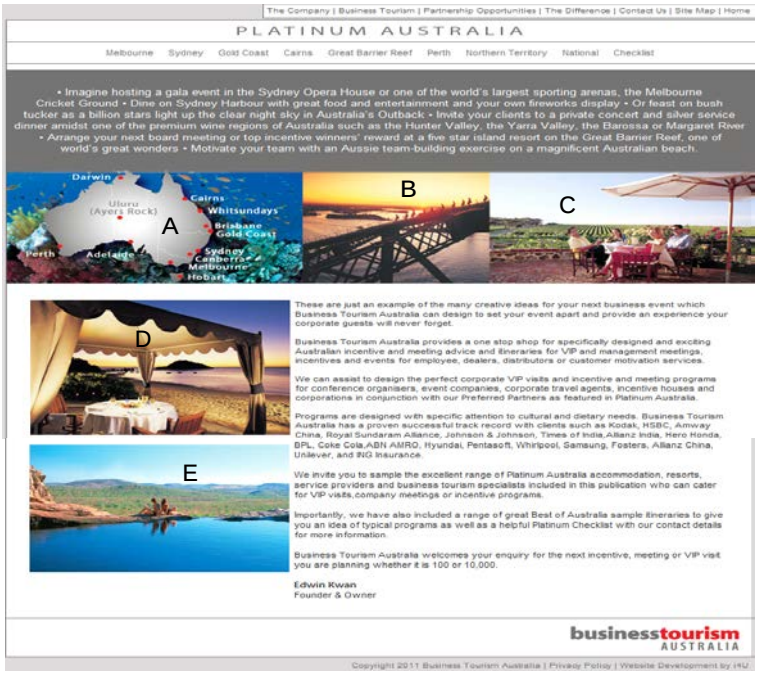
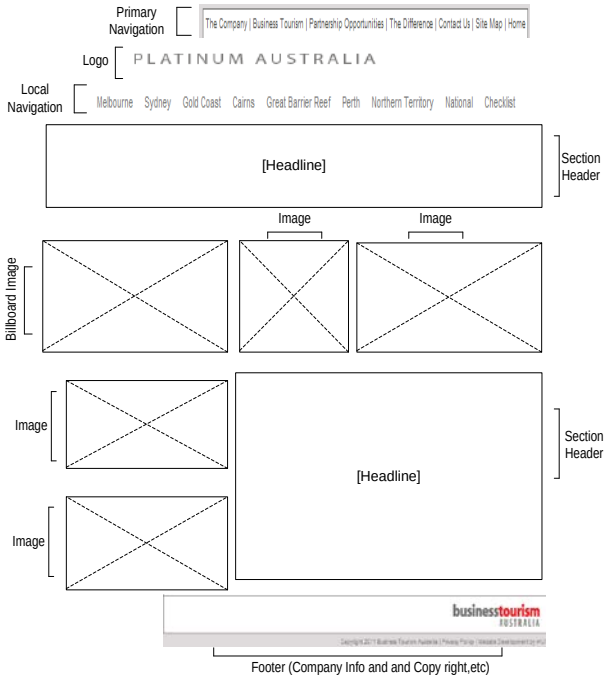


Figure A1.**58**: Platinum Australia Page Wireframe



Page Wireframe and Components

The page wireframe in Figure A1.58 comprises a primary navigation system, a logo, local navigation system and a section header at the top of the page. It also comprises a billboard image with other two images adjacent to it. Beneath the main image in the page, there is a section header which provides access to more info about the company. At the bottom of the page, there is a footer which contains an information link. To the left, there are two images,

one positioned above the other. These images represent links to information on Platinum's company plans.

Compositional Semantics

Home Page-Vertical Axis

In Figure A1.57, the vertical axis is considered strong because it begins at the top of the page with three images. The image on the left is considered the most salient. From a horizontal view, this image, (a map) represents the company's promise regarding the availability of services. This represents the ideal position of the company towards its customers reflected in the availability of a number of branches around the country, and provision of its services that can lead to a very satisfactory outcome for Platinum. This image also reflects the most heavily weighted because of its location at the top left of the page. The hue of the colour (blue & white) of the main image (on top left of the page) reflects the vector that relates to the text and two other images at the bottom of the page (bottom sector). A sharp line or frame separates the two page sectors (top & bottom). Five vectors lead to the bottom of the page which contains both text and images, the hue of the colours (blue and white) of the main image (A) (map) at the top left of the page, the frame (line) that separates the top images from the bottom of the page that contains the text and two other images (a dining table ready to be used in front of a lake) (D) above a couple standing in front of the lake (E), the edges of the bridge (image B) and the edge of the big umbrella (image C) which points directly to the text. The colour (orange) of the sunset in the bridge, image (B) is repeated in the image (dining table ready to be used) (image D). In addition, the colour (brown) of the sand, image (C) is repeated in image (E). The reading path vertically, is circular and begins with image (A) at the top left of the page, then moves to the image (B) (bridge) to the image of two couples (C), to the image (E) (couple) to the image of the dining table (D) and on to other areas of the page. The image of the bridge (B) is considered the balancing centre of the page, from a vertical view. The images at the bottom of the page are considered less heavily weighted than the images at the top of the page.

Home Page-Horizontal Axis

In Figure A1.57, to the left of the bottom of the page, images (D) and E) are considered less salient and less valued. Images are considered less salient to more salient and real to ideal when reading from left to right. The text at the bottom of the middle of the page, is considered in this case, the balancing centre of the page from a horizontal view. The hue of the colour (blue) of the lake, in image (E), the edges of the chairs in the dining tables, image (D), and the colour (white) of the table in image (D) act as vectors to the text. In addition, the hue of the colour (brown) in the lake and dining table images (D and E) act as another vector to both images. Moreover, the reflection of the couple in image (E) serves as a vector to itself. The reading path horizontally, is a regular reading path moving from the left side images to the text on the right and on to other areas of the page.

Field and Tenor Relations

Field Relations for the components are listed in Appendix 2A (14). Tenor Relations for the components are listed in Appendix 2B (14).

Organising Scheme

A single organising scheme is detected for Platinum Australia, depicted in Figure A1.59. As with other dialogues of this kind, the organising scheme comprises an Exact Geographical-Oriented organising orientation.

Figure A1**.59**: Platinum Australia Organising Scheme

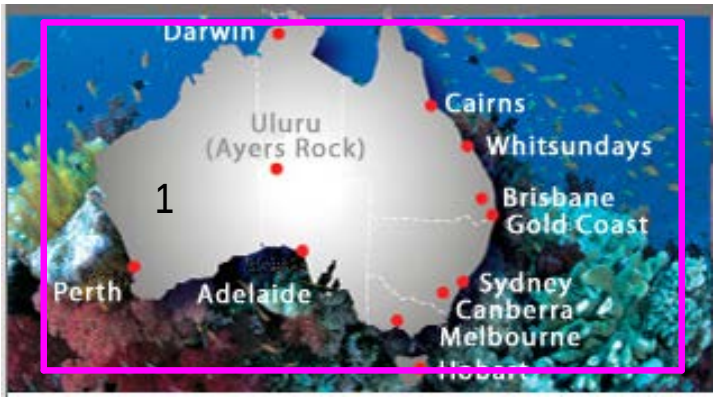


Image Analysis

In Figure A1.57, image (C) represents a visual offer as it is enhanced by the absence of a gaze at the viewer and as it doesn't demand that the viewer to enter into an imaginary social relation with it. Also, this image is seen from a low angle so the viewer has less power over it and from a frontal angle which includes the level of involvement. Moreover, the social distance is presented here in a close shot as it represents the intimate and personal aspects of the site. The modality here is real.

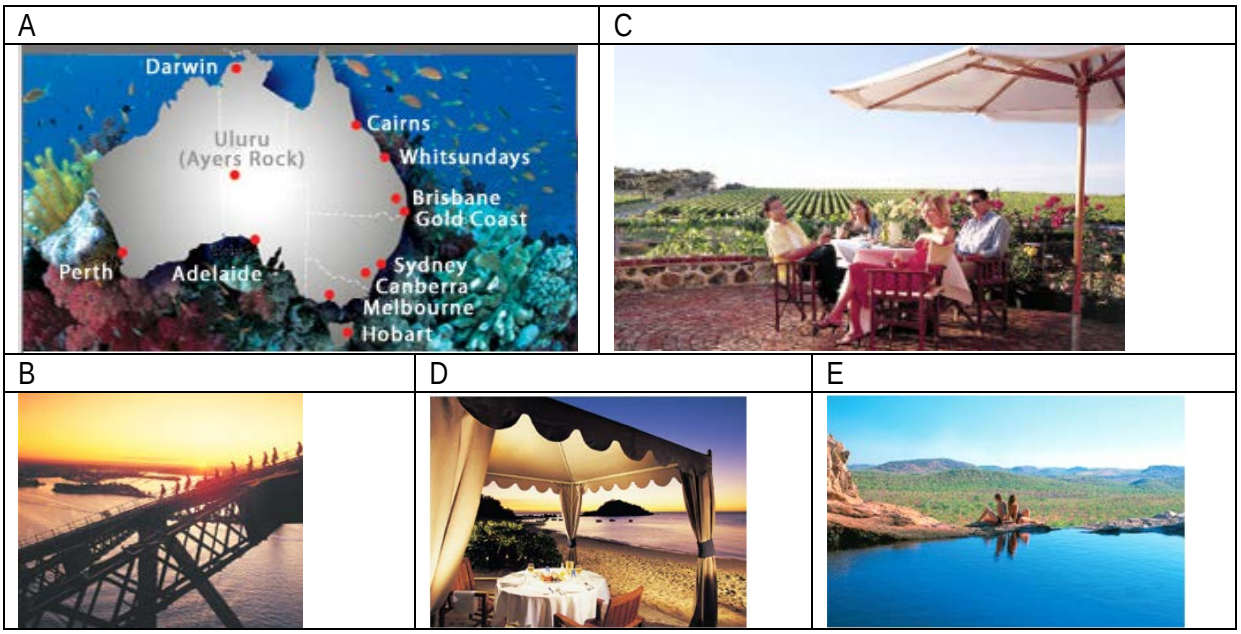
Image-Text Analysis

The image-text analysis is shown in Figure A1.60 and clarified in Table A1.15.

Table A1**.15**: Text-image Relations in Platinum Australia

	Image	Text	Relationship
A	Map	"Cities' names…"	Augmentation
B	Bridge	No Text	N/A
C	Two couples outdoors	No Text	Homospatiality
D	Dining table facing lake	No Text	N/A
E	Couples facing lake	No Text	N/A

Figure A1**.60**: Platinum Australia Image-Text analysis for Components (A…E)



A1**.5.3 Travelscene**

Travelscene started business with its members 30 years ago as a Tourism Management Company which specialises in SME Corporate business. Travelscene is a professional organisation of individual business owners, who specialise in creating business travel for the Australian business sector, as well as leisure travel and serves over two million travellers each year.

Page Design

The page design in Figure A1.61 comprises three images which are connected to texts at the bottom of the page, related to Travelscene's financial position, reward program, and information from management. Moreover, a main image which is positioned at the top of the page which is about company promotions to customers around business class travel. To the left side of the page, there are some texts which are related to location services.

Page Wireframe and Components

The page wireframe depicted in Figure A1.62, comprises a primary navigation system, a logo, and a section header at the top of the page which represents a module facilitating search for travel agents networks. In addition, it contains a billboard image at the top of the page which comprises a search facility for ticket sales. At the bottom of the page, three column panels of headlines of which two are connected to images and the other to a process for calculating financial fluctuations. At the bottom of the page, a footer is evident. On the left side of the page, a column panel header which represents a module that facilitates the discovery of location services of travel managers is detected.

Figure A1.**61**: Travelscene Page Design

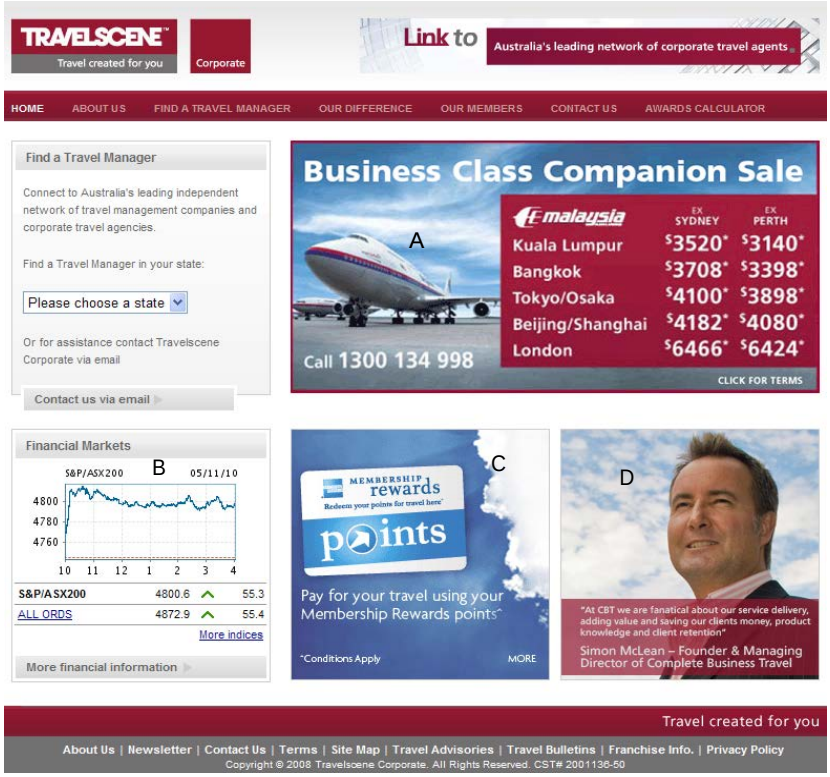
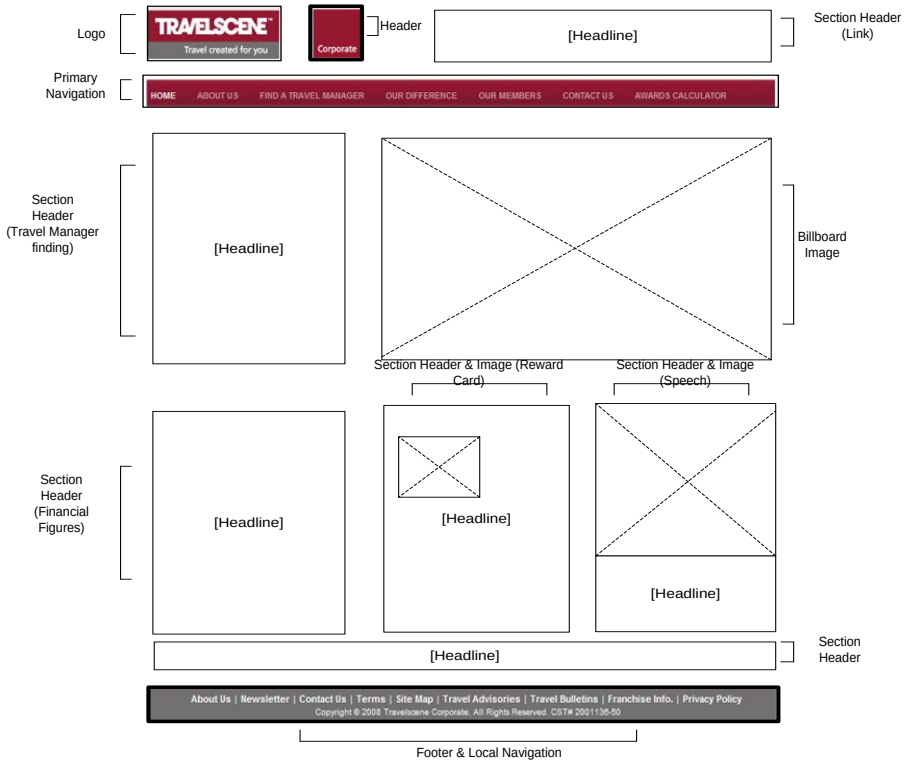


Figure A1.**62**: Travelscene Page Wireframe



Compositional Semantics

Home Page-Vertical Axis

In Figure A1.61, the vertical axis is considered strong because it begins the top of the page (first sector of the page), with an image (A) that is considered the most salient. The image reflects Travelscene's promise related to the confidence of the company aspects in providing access to an efficient fleet of planes which demonstrates the ideal position of the company towards its customers. This image reflects the most heavily weighted on the page because of its prominent position at the top of the page. The hue of the colour of this main image from blue through to grey reflects the vector that relates to the bottom of the page second sector of the page). A line or frame that separates the two sectors (top and bottom) is visible. Six vectors lead to the bottom sector of the page, the hue of the colour of the image (A) at the top of the page, the frame (line) that separates the top image from the bottom of the page, the tyres of the plane in (A), the jet fan of the plane in image (A), the front area of the plane (image A) and the use of the same colour of the background of image (A) at the top of the page as a background in some images at the bottom of the page. The reading path vertically, is regular, beginning with image (A) (plane) at the top of the page, then to image (C) then to image (D), and on to other areas of the page. The two images at the bottom of the page, (point's card) (C) and (man) (D) are considered less heavily weighted than the image of the plane (A) at the top of the page.

Home Page-Horizontal Axis

In Figure A1.61, in the area to the right of the page, image (D) (man) is considered the most salient and most valued. Also, three images (financial market diagram) (B), (points card) (C) and (man) (D), adjacent to each other, are considered less salient to more salient and real to ideal moving from left to right. Image (C) (points card) positioned in the middle of the page, is considered in this case, the balancing centre of the page from a horizontal view. The arrow that represents the letter "O" in the word "points" in image (C) acts as a kind of vector to guide the viewer to image (D) on the right side of the page. The direction of the face of the man in this right image is a vector toward the diagram under the text "Financial Markets" (B). The reading path horizontally, represents a circular reading path moving from image (financial market diagram) (B) on the right side of the page, to mage (C) to image (D) on the left side of the page, returning to (B) and on to other areas on the page.

Field and Tenor Relations

Field Relations for the components are listed in Appendix 2A (15). Tenor Relations for the components are listed in Appendix 2B (15).

Organising scheme

In Figure A1.63, there is one type of Organising Scheme detected, Ambiguous Task-Oriented.

Figure A1.**63**: Travelscene Organising Scheme

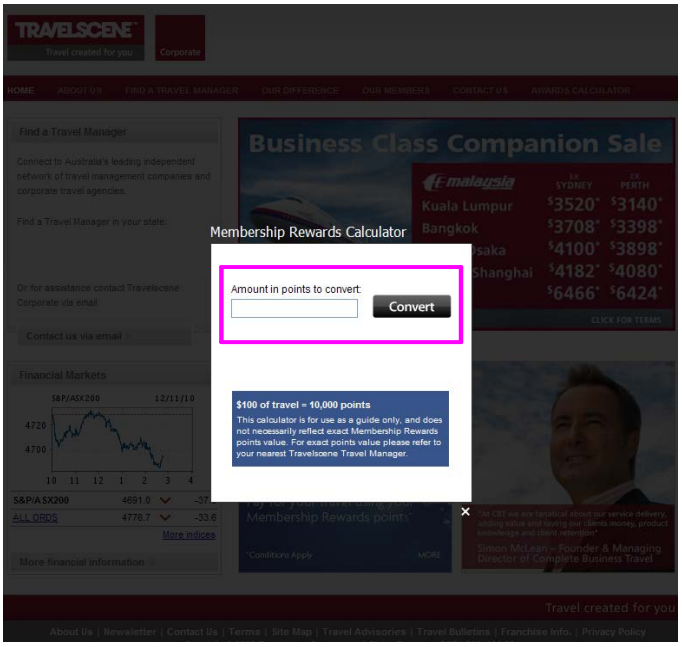


Image Analysis

In Figure A1.61, image (D) represents a visual offer because it is enhanced by the absence of a gaze at the viewer and as it doesn't demand that the viewer enter into an imaginary social relationship with it. This image is viewed from a low angle so the viewer has less power over it and from an oblique angle which excludes the level of involvement. The social distance is represented here in a medium shot as it represents the business aspects of the company. The modality here is real however, the absence of a setting is noted.

Image- Text Analysis

The image-text analysis is shown in Figure A1.64 and clarified in Table A1.16.

Table A1.**16**: Travelscene Text-image Relations

	Image	Text	Relationship
A	Plane	"Business Class companion Sale…destinations…"	Augmentation
B	Financial diagram	"Financial Markets…shares' prices"	Augmentation
C	Membership rewards points card	"Pay for your travel using your Membership Rewards points"	Exposition
D	Director- Simon McLean	"At CBT we… Simon McLean…"	Augmentation

Figure A1.**64**: Travelscene Image-Text analysis for Components (A...D)

A

B

C

D

A1.6 Energy

A1.6.1 AGL

The Australian Gas Light Company (AGL) was founded in Sydney in 1837. AGL supplied gas for the first public lighting of a street lamp in Sydney in 1841 and was the second company to list on the Australian Stock Exchange. AGL provides renewable energy products.

Page Design

The page design in Figure A1.65 comprises three text blocks at the bottom of the page, which relate to AGL's solutions for customers' homes, businesses and information about the company. Moreover, a main image (of an AGL worker visiting a customer home to give advice of how to become more energy efficient) is positioned at the top of the page. Next to this image, there is a text block that relates to AGL's pricing policy. Positioned at the right side of the page are a number of texts which relate to payment, moving address, joining AGL as a customer, planning, pricing, and a help function.

Page Wireframe and Components

The page wireframe depicted in Figure A1.66 contains a primary navigation system, a logo and a page search module and section header at the top of the page. In addition, there is a billboard image with an adjacent column panel also positioned at the top of the page, which facilitates a "quote" process. At the bottom of the page, there are three column panels of headlines which relate to additional energy solutions and under this, a footer is visible. On the right side of the page, there are six section headers, related to access to easy online services.

Compositional Semantics

Home Page-Vertical Axis

In Figure A1.65, the vertical axis is considered very strong because it begins at the top of the page (first sector) with an image (A) (employee shaking the hand of the customer). This image reflects the company's promise which reflects the ideal position of the company towards its customers. The ideal position represented here is the instant and the quality services provided by AGL and the kindness to their customers that will have a strong effect on the customer's perception of the quality of the products that are produced and the service provided by the company. This image reflects the most salient on the page. This image is considered the most heavily weighted because of its prominent position at the top of the page. The straight line in the bottom of the image is considered as a frame that separates the image from the text area of the page (separating the two page sectors, top and bottom). The reading path is circular, its' starting point looking to the most salient image on the page (employee shaking the hand of the customer), then to the second image (bottom of the page), back again to the first image, then on to other areas of the page. Four vectors lead to a text block, repeating of the colour (blue) in the top image, the frame (line) that separates the top image from the text, the hand and the suitcase on the hand of the employee in image (A) and the same colour (blue) of the image is used again in the image at the bottom (text block) of the page.

Home Page-Horizontal Axis

In Figure A1.65, visible in the middle of the page is a text block (Business Energy Solution) that represents the most salient area of the page and is considered the balancing centre of this page. The text to the left and right sides of the text in the middle of the page (Business Energy Solution) are considered as kind of vector to get the viewer to concentrate on the far right components of the page (six components) as they have similar text colour (blue). From the reading path horizontally, is a regular reading path, moving the viewer from the text on the left side of the page to the balancing centre text (Business Energy Solution), to the text on the right side of the page and then on to other areas of the page

Figure A1.**65**: AGL Page Design

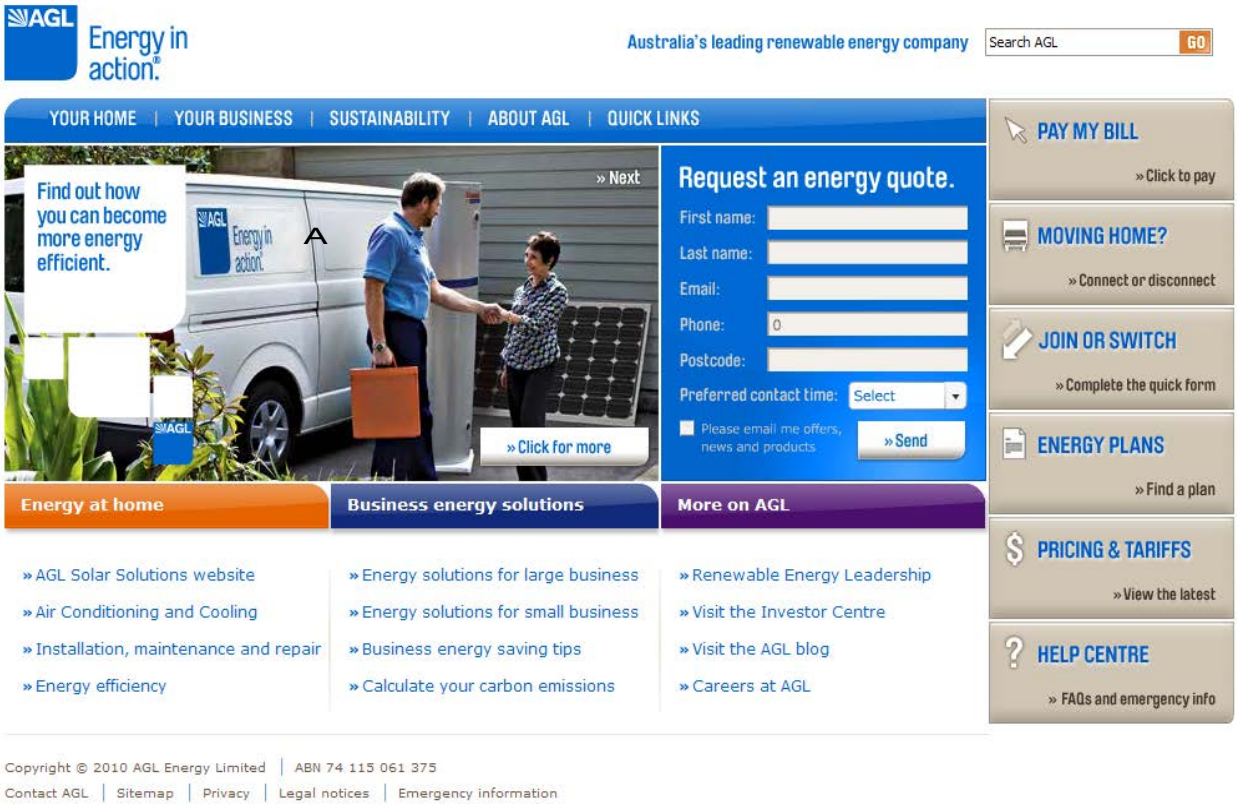
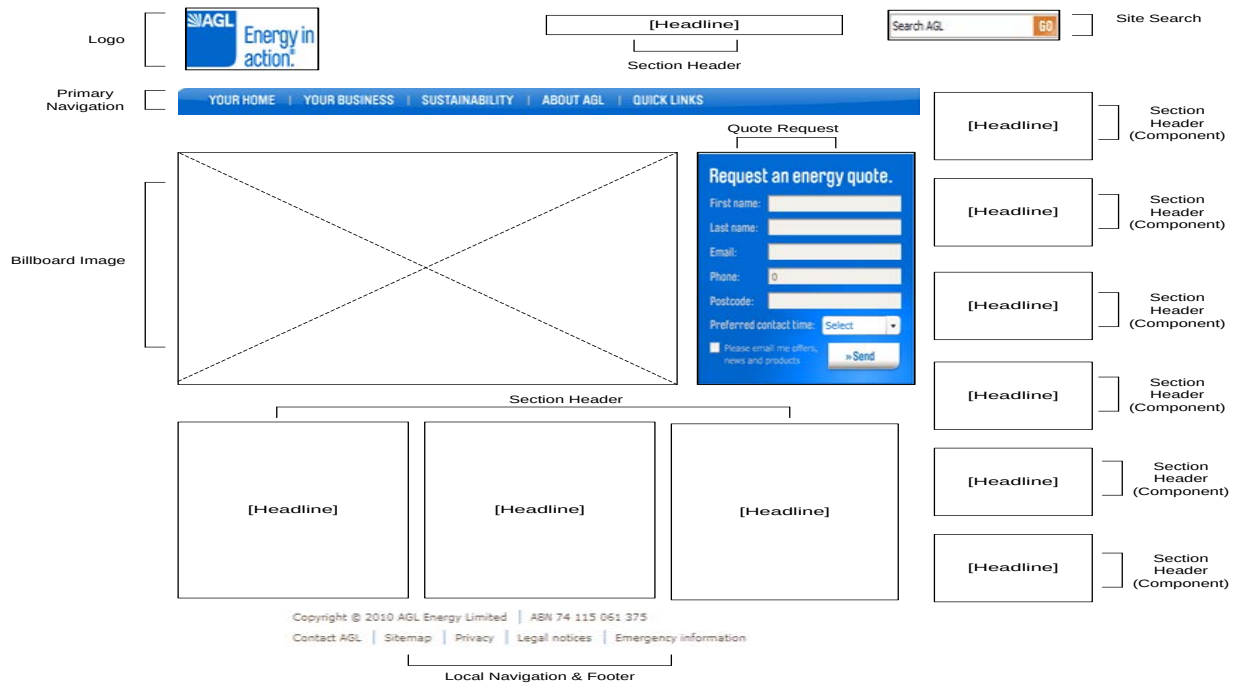


Figure A1.**66**: AGL Page Wireframe



Field and Tenor Relations

Field Relations for the components are listed in Appendix 2A (16). Tenor Relations for the components are listed in Appendix 2B (16).

Organizing Scheme

In Figure A1.67, two types of Organising Scheme, Exact Chronological (A) and Ambiguous Task-Oriented (B) are detected.

Figure A1**.67**: AGL Organising Schemes

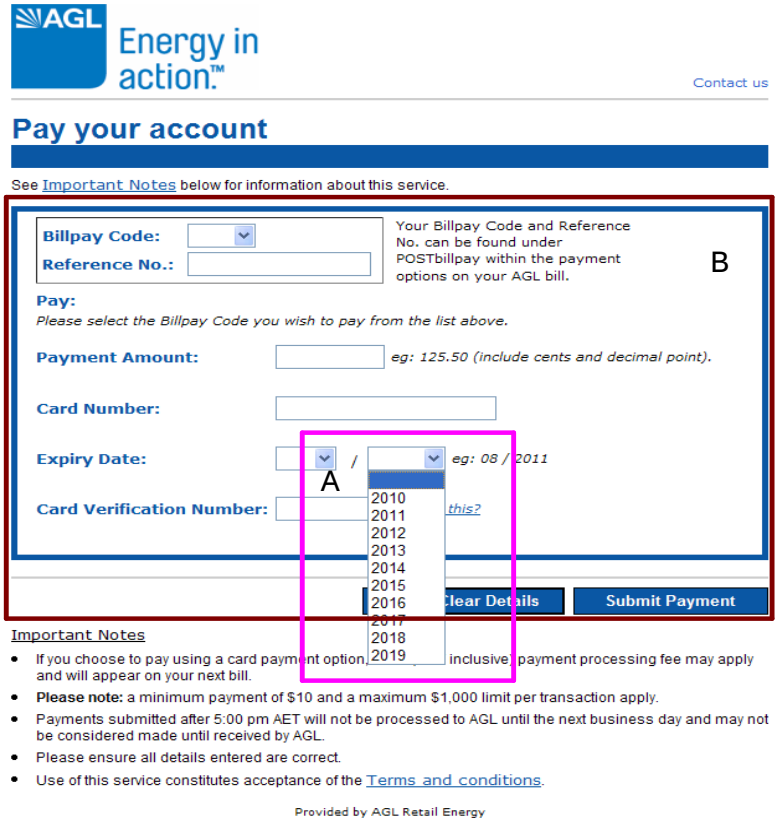


Image Analysis

In Figure A1.65 (A), this image represents a visual offer as it is enhanced by the absence of a gaze at the viewer and as it doesn't demand that the viewer enter into an imaginary social relation with it. Also, the image is seen from a low angle so the viewer has less power over it and from a frontal angle which includes the level of involvement. Moreover, the social distance is represented here in a medium shot, representing the business aspects of the company. The modality here is real.

Image-Text Analysis

The image-text analysis is shown in Figure A1.68 and clarified in Table A1.17.

Table A1**.17**: Text-image Relations- AGL

	Image	Text	Relationship
A	Employee shaking the hand of the customer	"Find out how you can become more energy efficient"	Divergence

Figure A1**.68**: AGL Image-Text Analysis

5 A1.6.2 Energy Australia

Energy Australia specializes in distributing energy to over 2.5 million homes and businesses, across NSW, Queensland, Victoria, South Australia and the Australian Capital Territory. Energy Australia was incorporated after 1960. The company is committed to providing a variety of green energy options.

Page Design

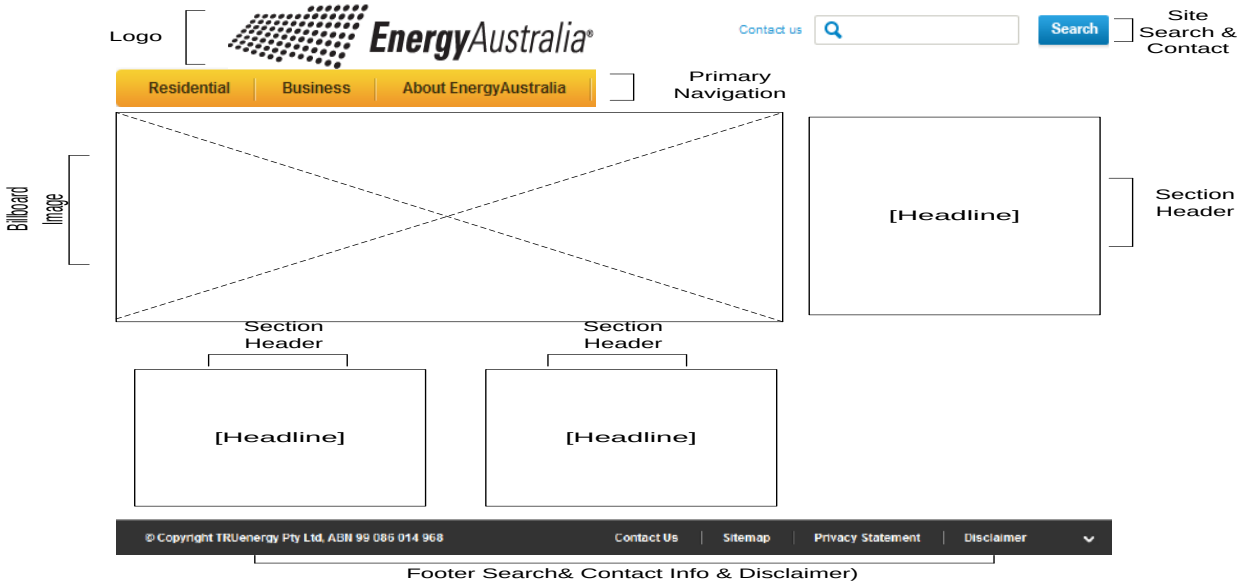
The page design in Figure A1.69 consists of a main image (A) (sample of cakes and fruit) which is positioned at the top of the page. Above the image is a site search facility. In the middle of the page, there are two main texts blocks. The first represents the products and services offered by the company and the second represents the latest news regarding a strategic partnership with another company as well as a link to purchase of company shares. On the top right side of the page, adjacent to the main image (A), there are links that lead to information about the company, subscription and payments methods. At the bottom of the page, site map, privacy statement and general information about the company links are visible.

Page Wireframe and Components

The page wireframe depicted in Figure A1.70 contains a logo and search tool at the top of the page. A billboard image and primary navigation system are positioned above it. Adjacent to the image (A), is a column panel header representing modules that can be used to accomplish online services provided by the company. In the middle of the page, there are two main column panel headers which facilitate access to information on the Energy Australia's services and some online tools. At the bottom of the page, a footer which offers a search tool and access to additional information about the company.

Figure A1.**69**: Energy Australia Page Design

Figure A1.**70**: Energy Australia Page Wireframe



Compositional Semantics

Home Page-Vertical Axis

In Figure A1.69, the vertical axis is considered strong because it begins on the top of the page (first sector) with an image (A) that is considered the most salient. This image (A) reflects Energy Australia's promise regarding global trends of providing Energy products and services which represents the ideal position of the company towards its customers through the use of efficient energy sources that can lead to a very positive perception of its products and services. This image (A) also reflects the most heavily weighted on the page because of its prominent position at the top of the page. The hue of the colour (orange) in the main image (A) reflects the vector that relates to the text block at the bottom of the page (second sector). A sharp line or frame separates the two sectors (top and bottom). Five vectors lead to the text about the company, the hue of the colour (orange) of the text in the top image (A), the frame (line) that separates the image (A) at the top of the page from the bottom sector of the page that contains the text block, the edges of the cake and fruit in the main image (A) which points directly to the text block, and the colour (orange) of the cake and the inside area of the fruit in the main image (A). In addition, the button "Find out more" in the main image (A) is repeated again in the text block at the bottom of the page. The reading path vertically, is regular, beginning with image (A) at the top of the page, moving then to the frame, then to the text block at the bottom of the page, then on to other areas of the page. The text block at the bottom of the page, is considered less heavily weighted than image (A) at the top of the page.

Home Page-Horizontal Axis

In Figure A1.69, the text at the bottom left area of the page is considered less salient and less valued. The two text blocks in the middle bottom region of the page are considered in this

case, the balancing centre of the page from a horizontal view. The colour (orange) of the titles of the two main text blocks (Residential products and services & sale…) at the bottom of the page act as a kind of vector. In addition, the arrows in the information which are embedded in the first text block at the bottom of the page, "Residential products and services" act as another vector to other text blocks on the page. The reading path horizontally, is a regular reading path moving from the left side text to right side text, then on to other areas of the page.

Field and Tenor Relations

Field Relations for the components are listed in Appendix 2A (17). Tenor Relations for the components are listed in Appendix 2B (17).

Organising Scheme

A single organising scheme is considered for Energy Australia (depicted in Figure A1.71), which is "changing registration details". As with other dialogues of this kind, it utilises an Ambiguous Task-Oriented organising scheme.

Figure A1**.71**: Energy Australia Organising Scheme

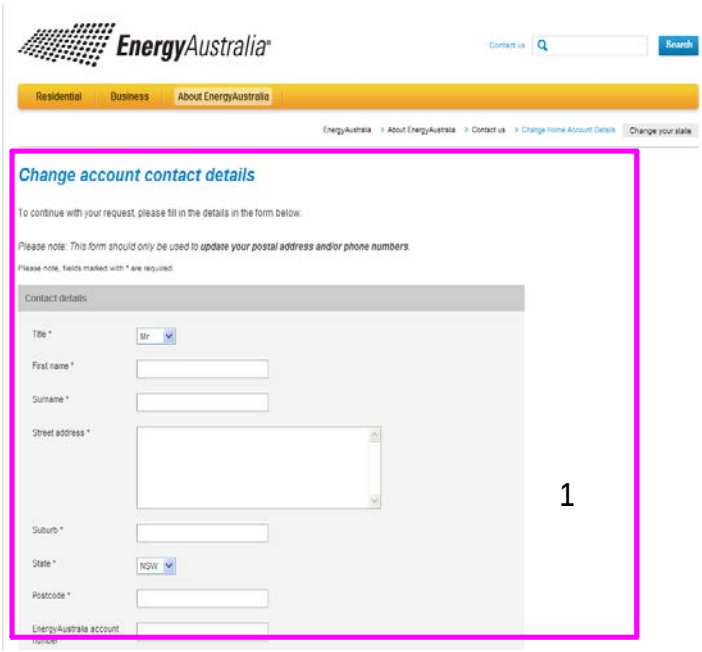


Image Analysis

In Figure A1.69, image (A) represents a visual offer because it is enhanced by the absence of a gaze at the viewer and as it doesn't demand that the viewer enter into an imaginary social relation with it. Also, this image is viewed from a high angle so the viewer has more power over it and from an oblique angle which excludes the level of involvement. Moreover, the social distance is presented here in a medium shot as it represents the business aspects of the company. The modality here is real except that the weave of the tablecloth in one of the

images is only just visible.

Image-text Analysis

The image-text analysis shown in Figure A1.72 and is clarified in Table A1.18.

Figure A1**.72**: Energy Australia Image-Text analysis

Table A1.**18**: Text-image Relations - Energy Australia

	Image	Text	Relationship
A	Cake and Fruit	"Visit Cathy's Kitchen…Get the latest recipes…"	Exemplification

A1.7 Others

A1.7.1 Leading Edge Electronics

Leading Edge Electronics was established in 1986. The company has 42 business outlets across regional and rural Australia, offering a wide range of products and services including computers and accessories, digital imaging, home entertainment, electronics, phones, faxes, mobile phones and accessories and electronic toys and learning aids for children.

Page Design

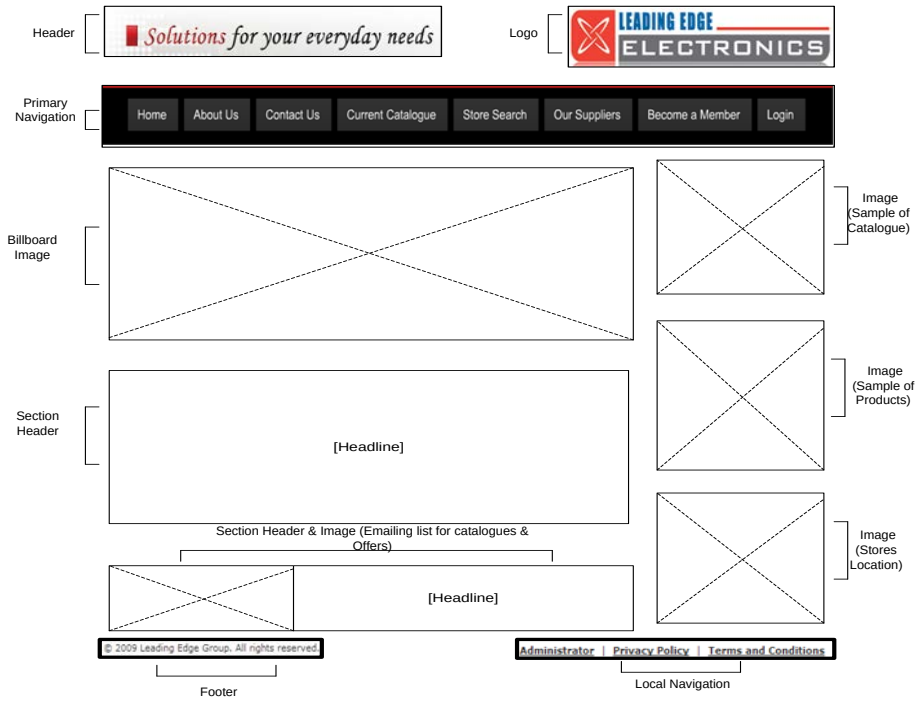
The page design in Figure A1.73 consists of one image comprising several catalogues. This image is connected to a text block at the bottom of the page. There is also a prominent image (A) of a map of Australia, positioned at the top of the page. On the right side of the page, there are a number of images B, C and D) connected to text blocks related to these images (catalogues, products, and location of the company). A text block in the middle of the page represents the company's welcoming message.

Figure A1.**73**: Leading Edge Electronics Page Design

Page Wireframe and Components

The page wireframe in Figure A1.74 consists of a primary navigation system, a logo, and a header, positioned prominently at the top of the page. In addition, there is a billboard image also located at the top of the page. Positioned in the middle of the page, is a section of headline which facilitates access to general information on the company. At the bottom of the page, a footer is noted and above this is a section header that comprises an image that links to a module which facilitates access to free offers and registering for mailing lists. On the right hand side of the page are three column panels consisting of images that facilitate access to catalogues, products, and store locations.

Figure A1**.74**: Leading Edge Electronics Wireframe



Compositional Semantics

Home Page-Vertical Axis

In Figure A1.73, the vertical axis is considered strong because it begins at the top (first sector) of the page with an image (A) (map) that is considered the most salient. This image reflects the company's promise regarding the availability of products and services across Australia which reflects the ideal position of the company towards its customers. This image reflects the most heavily weighted on the page because of it prominent position to the left of the top of the page. The colour used in the top sector of the page ranges from white to grey. The hue of the colour reflects the vector that relates to the second sector (bottom) of the page. Visible is a line or frame that separates the two page sectors (top and bottom). Six vectors lead to the bottom sector, the hue of the colour used in the top sector of the page, the frame that separates the top sector of the page from the bottom sector, the same colour of the background used in the of the first sector is used again in the bottom sector of the page as a

background in some of the images positioned there, the base of image (C), the colour (red) in the image and used in the text in the heading “view our latest catalogue” (B) is repeated again in the text at the bottom of the page “Click here…” (E), the shape of the catalogue is similarly shaped to the image next to the text “Click here…” (E). In addition, the map (A) at the top of the page is repeated again in the bottom sector of the page. The reading path vertically, is circular, beginning with the first image (A), moving to image (D) at the bottom of the page and back to the top of the page to and on to images located on other areas of the page. The image (C) in the middle and to the right of the page is considered less heavily weighted than image (A) at the top of the page, but is more heavily weighted than the image (D) positioned at the bottom of the page.

Home Page-Horizontal Axis

In Figure A1.73, in the right area at the right of the page, image (D) is considered more salient and more valued. The other images on the page are considered less salient to more salient and real to ideal moving from left to right. The text “Click here…” (E), located in the middle of the page is considered in this case, the balancing centre of the page from a horizontal view. The edges of the text “Click here…” (E), act as a kind of vector to point to image (D) image positioned to the far right of the page. The reading path is deemed to be horizontal and is a regular reading path reading from image (E) on the left side of the page to image (D) on the right side of the page, then on to other areas of the page.

Field and Tenor Relations

Field Relations for the components are listed in Appendix 2A (18). Tenor Relations for the components are listed in Appendix 2B (18).

Organizing Scheme

In Figure A1.75, one type of Organising Scheme, Exact Geographical (A) is detected. Figure 5.76 also depicts a single Organising Scheme, Ambiguous Task-Oriented (A).

Figure A1.**75**: Organising Scheme (1)

Figure A1.**76**: Organising Scheme (2)

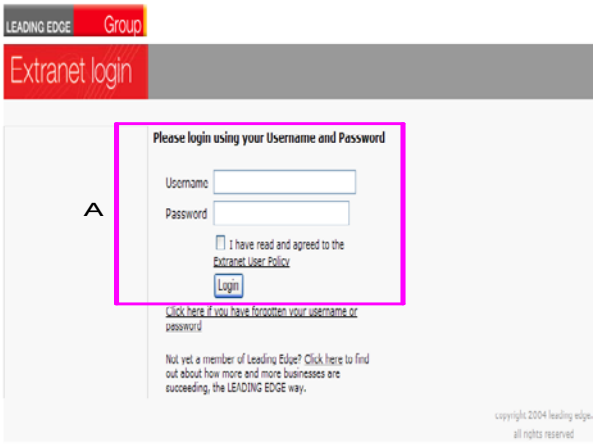


Image Analysis

In Figure A1.73, image (B) represents a visual demand because it is enhanced by a gaze at the viewer and it demands that the viewer enter into an imaginary social relation with it. This image is viewed from a low angle so the viewer has less power over it and from a frontal angle which includes the level of involvement. Moreover, the social distance is presented here in a medium shot which represents the business aspects of the company. The modality here is considered unreal.

Image-Text Analysis

The image-text analysis is shown in Figure A1.77 and clarified in Table A1.19.

Figure A1.**77**: Leading Edge Electronics Image-Text analysis for Components (A...E)

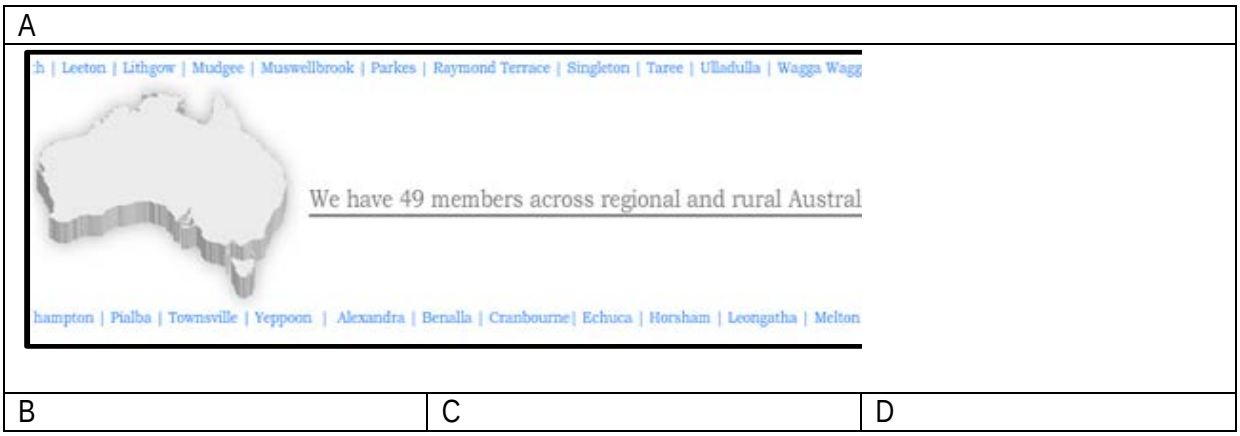


Table A1**.19**: Text-image Relations - Leading Edge Electronics

	Image	Text	Relationship
A	Australia map	"We have 49 members across regional and rural Australia"	Augmentation
B	Man smiling	"View Our Latest Catalogue"	Divergence
C	Helicopter	"Products of the Month… RC Helicopters TWISTER POLICE HELICAM"	Exemplification
D	Map	"Store Locator"	Clarification
E	Samples of catalogues	"…to receive our free catalogue…"	Exemplification

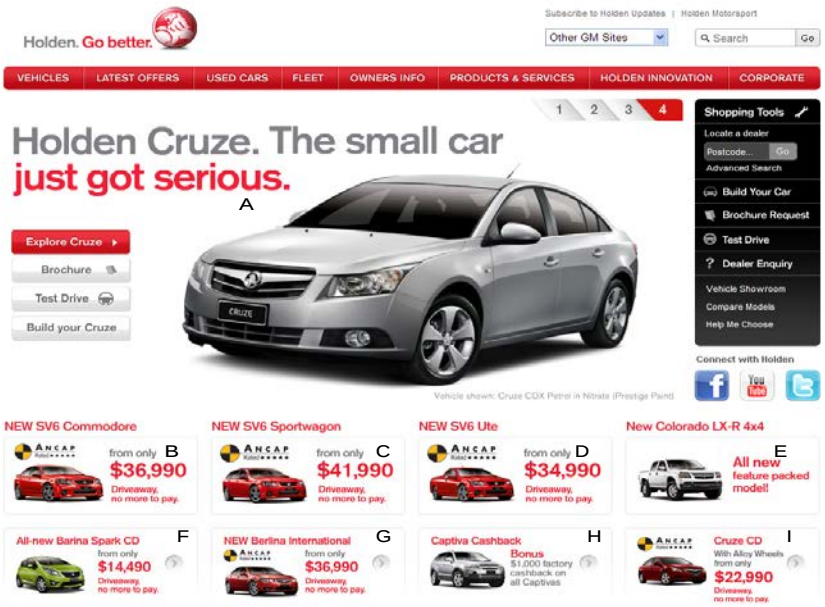
A1**.7.2 Holden**

Holden commenced business in 1856 as a small business in South Australia. Today Holden is a motor company that specialises in producing Australian cars. In addition, Holden is one of only seven fully-integrated global General Motors operations that designs, builds and sells vehicles for Australia and other countries. Holden's company headquarters is located in Melbourne and was opened in 2003 at a cost of $400 million. Holden has more than 250 dealerships throughout Australia.

Page Design

The page design in Figure A1.78 consists of eight images representing Holden products. These images are connected to a text block located at the bottom of the page. A main (prominent) image positioned at the top of the page is dedicated to the Holden Cruze. On the right hand side of the page, there is a text block related to shopping tools manufactured by the company. There is some text located at the top of the page adjacent to image (A) linked Explore, Brochure, Test Drive and Build your Cruze.

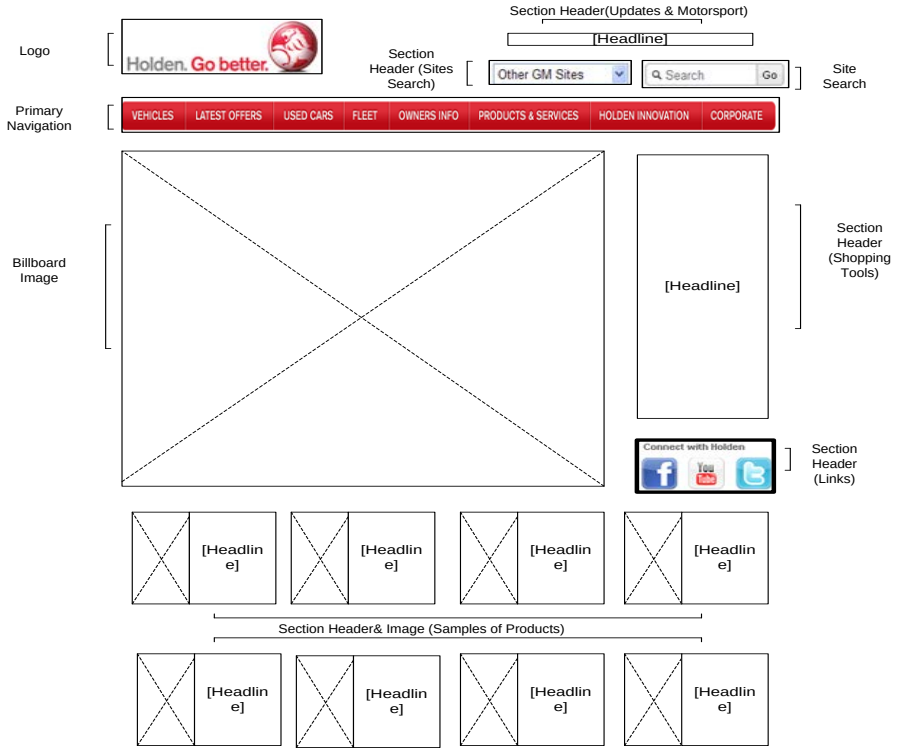
Figure A1.**78**: Holden Page Design



Page Wireframe and Components

The page wireframe in Figure A1.79 consists of a primary navigation system, a logo, a site search facility and Holden updates positioned at the top of the page. In addition, there is a billboard image positioned next to modules that facilitate the process of testing and building specific cars. In the middle of the page, there are four headlines which are connected to images which link to some of Holden's products. At the bottom of the page, four headlines connect to images which facilitate access to information on Holden product. Positioned at the right side of the page are a section header and a series of links providing access to the social web.

Figure A1**.79:** Holden Page Wireframe



Compositional Semantics

Home Page-Vertical Axis

In Figure A1.78, the vertical axis is considered strong because it begins at the top of the page (top sector) with an image (A) (sample of a car) that is considered the most salient on the page. This image (A) reflects the promise aspects of the company in terms of the quality of products which represents the ideal position of the company toward its customers. This image also reflects the most heavily weighted on the page because of its prominent position at the top of the page. The colour of this image reflects the vector that relates to the text at the bottom of the page (bottom sector). A line or frame separates the two sectors (top and bottom) of the page. Six vectors lead to text about the company, the colour image (A) at the top of the page, the frame that separates image (A) from the text, the shaded glasses in image (A) and repeated in the images at the bottom of the page, the same colour used in the background of the image (A) is used again in the text at the bottom of the page and as a background colour in some of the images (eg. sample cars) at the bottom of the page, the tyres of the car in image (A) and the front section of the car in image (A). The reading path vertically, is regular, beginning with the picture of the car in image (A) and moving on to any other areas of the page. The four sample cars depicted in images (B, C, D and E) are considered less heavily weighted than image (A) at the top of the page, but are more heavily weighted than the four images (F, G, H and I) at the bottom of the page.

Home Page-Horizontal Axis

In Figure A1.78, the image "New Colorado" (E), positioned to the right of the page considered is the most salient and most valued. Other images on the page are considered less salient to more salient and real to ideal moving from left to right. The two images in the

middle of the page, “SV6 Sportwagon” (C) and “New SV6 Ute” (D) are considered in this case, the balancing centre of the page from a horizontal view. The colour red, which is repeated in the first three images B, C and D, from left to right act as a kind of vector to guide the viewer to the image positioned to the far right of the page and other images positioned at the bottom of the page. The reading path is determined horizontally and is considered a regular reading path, moving from the left side image to the next set of images (B, C, D and E), then on to other areas on the page.

Field and Tenor Relations

Field Relations for the components are listed in Appendix 2A (19). Tenor Relations for the components are listed in Appendix 2B (19).

Organising Scheme

In Figure A1.80, one type of Organising Scheme, Ambiguous Metaphor-driven is evident. In Figure A1.81, the Organising Scheme, Ambiguous Task-Oriented, is detected.

Figure A1**.80**: Organising Scheme (1)

Figure A1**.81**: Organising Scheme (2)

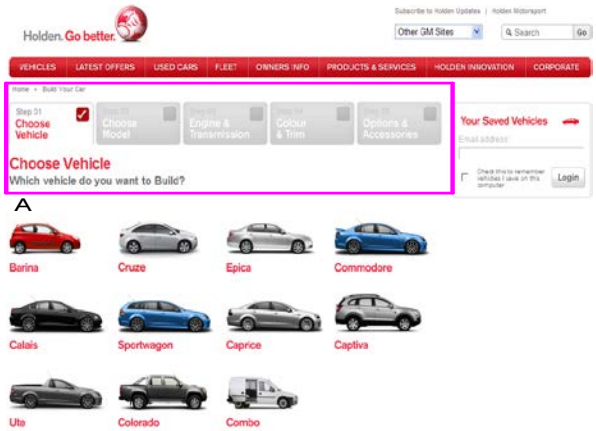


Image Analysis

In Figure A1.78, image (A) represents a visual offer because is enhanced by the absence of a gaze at the viewer and doesn’t demand that the viewer enter into an imaginary social relationship with it. Also, this image is seen from a high angle so the viewer has more power over it and from an oblique angle which excludes the level of involvement. Moreover, the social distance is represented here in a medium shot because represents the business aspects of the company. The modality here is real, for the absence of a setting.

Image-Text Analysis for Components (A...I)

The image-text analysis shown in Figure A1.82 and is clarified in Table A1.20.

Figure A1**.82**: Holden Image-Text analysis for Components (A...I)

A

B

C

D

E

F

G

H

I

Table A1.**20**: Text-image Relations – Holden

	Image	Text	Relationship
A	Sample of car-Holden Cruze	"Holden Cruze. The small car. Just got serious"	Augmentation
B	Sample of car- Commodore	"NEW SV6 Commodore…from only…"	Augmentation
C	Sample of car -Sportwagon	"NEW SV6 Sportwagon…from only…"	Augmentation
D	Sample of car -Ute	"NEW SV6 Ute…from only…"	Augmentation
E	Sample of car -Colorado LX-R 4*4	"NEW Colorado LX-R 4*4…All new…"	Augmentation
F	Sample of car -Barina Spark CD	"All-new Barina Spark CD…from only…"	Augmentation
G	Sample of car -Berlina	"NEW Berlina International…from only…"	Augmentation
H	Sample of car -Captiva	"Captiva Cashback…Bonus…"	Augmentation
I	Sample of car -Cruze	"Cruze CD…With…From only"	Augmentation

A1.**7.3 Officeworks**

Officeworks is a large supplier of office and stationery products catering for different kinds of work, home and school needs. Officeworks offers a large range of stationery items, technology solutions, furniture, general office products and print and copy services.

Page Design

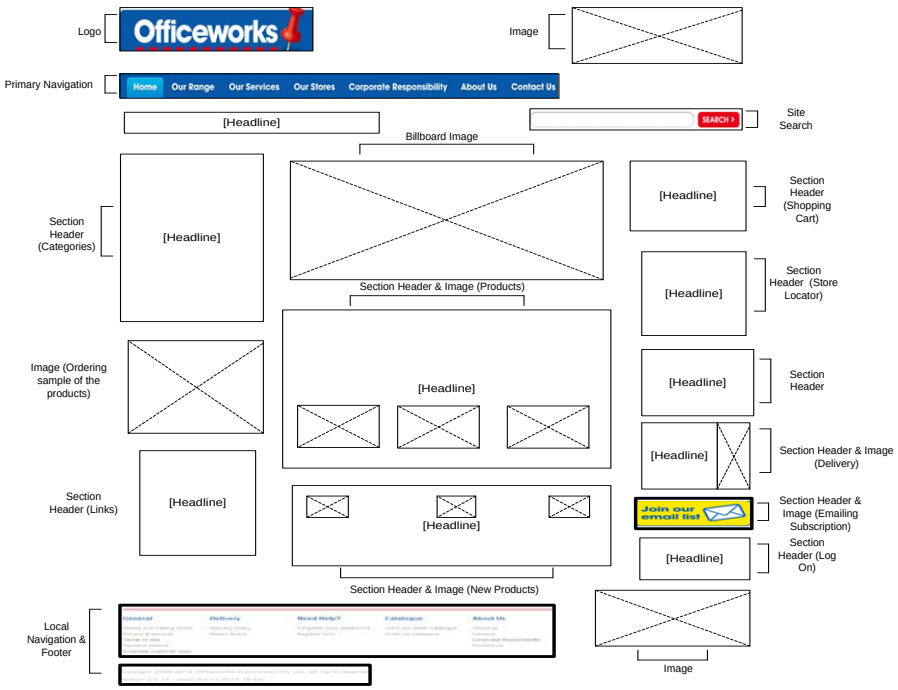
The page design depicted in Figure A1.83 consists of several images depicting "what is new" at Officeworks, which are connected to a text block situated at the bottom of the page. Moreover, a primary image (A) consisting of a set of coloured cabinets is positioned prominently at the top of the page. At the right side of the page, a text block related to a range of topics (shopping carts, store locations, lists, delivery, mailing list, and business customers) provided by the company are detected. In the middle of the page, there are three column panels of text connected to several images (Nestile Milo, Towel and Tissues). There are a number of column panels above each other on the left side of the page which are related to category of products, online order, and quick links.

Page Wireframe and Components

The page wireframe in Figure A1.84 contains a primary navigation system, a logo, and an image (A) at the top of the page. In addition, there is a billboard image at the top of the page which links to information about new products. In the middle of the page, there are three column panels of headlines which comprise of three images and related text which offer a purchasing best-selling products module. At the bottom of the page, is a footer and above this footer there is an image which assists the user with the discovery of new products. On the right hand side of the page, four column panel headers which facilitate access to Officeworks services (Delivery, Mailing list…) are detected. On the left side of the page, three column panels are visible. Two provide access to information on the company's product categories and quick links. The third panel presents the user with a module to facilitate the process of ordering company gift cards.

Figure A1.**83**: Officeworks Page Design

Figure A1.**84**: Officeworks Page Wireframe



Compositional Semantics

Home Page-Vertical Axis

In Figure A1.83, the vertical axis is deemed strong because it begins at the top (first sectpor0 of the page with an image (A) that is considered the most salient. This image reflects Officeworks' promise regarding the availability, innovation, and updating of products which represents the ideal position of the company towards its customers. This image represents the most heavily weighted on the page due to its prominent position at the top of the page. The colour of the image represents the vector that relates to the bottom of the page, which is considered the second sector of the page. A line or frame separates the two page sectors (top and bottom). Four vectors lead to the text (information on the company), the colour of the top image (A), the frame (line) that separates the top image from the text, the last (opened) drawer of the cabinet, and the same colour used in the background of the image (A) at the top (first sector) of the page is used again at the bottom of the page as a background. The reading path vertically, is regular and begins with the image (A) at the top of the page, then moves to the frame, then on to other areas of the page. The image at the top of the page is considered more heavily weighted than images on the other areas of the page.

Home Page-Horizontal Axis

In Figure A1.83, image (D) located to the left of the page, is less salient and less valued than the image of the car adjacent to the text "Order Now…" (E). Areas of the page are considered less salient to more salient and real to ideal moving from left to right. The text and associated image, "Best Seller" (B) in the middle of the page is considered in this case, the balancing centre of the page from a horizontal view. The (red) nail that is located at the far bottom right of the image (D) acts as a kind of vector to guide the viewer to other areas of the page, from a horizontal view. The reading path horizontally, which is a regular reading path moves the viewer from image (D) located on the left side of the page, to image (B) "Best Sellers", then on to other areas of the page.

Field and Tenor Relations

Field Relations for the components are listed in Appendix 2A (20). Tenor Relations for the components are listed in Appendix 2B (20).

Organising Scheme

In Figure A1.85, one type of Organising Scheme, Ambiguous Task-Oriented (A) is detected. In Figure A1.86, an Ambiguous Topical (A) organising scheme is evident.

Figure A1**.85**: Organising Scheme (1)

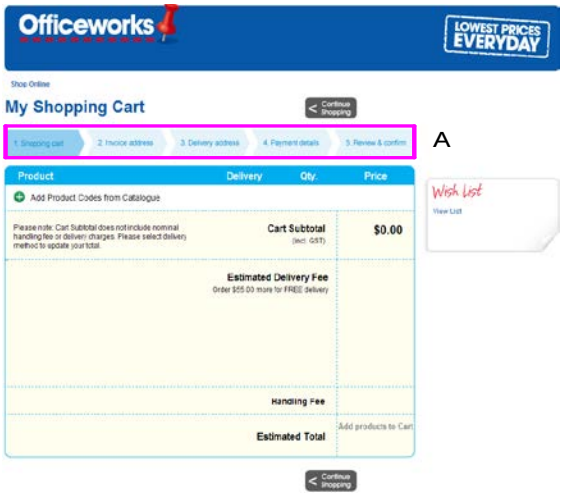


Figure A1**.86**: Organising Scheme (2)

Image Analysis

In Figure 5.83 (A), this image represents a visual offer because it is enhanced by the absence of a gaze at the viewer and it doesn't demand that the viewer enter into an imaginary social relationship with it. Also, this image is viewed from a high angle so the viewer has more power over it and from an oblique angle which excludes the level of involvement. Moreover, the social distance is represented here in a medium shot because represents the business aspects of the company. The modality here is real, except for the absence of a setting.

Image-Text Analysis

The image-text analysis is shown in Figure A1.87 and clarified in Table A1.21.

Table A1**.21:** Text-image Relations - Officeworks

	Image	Text	Relationship
A	Cabinet	"Try our new Filing Cabinet…"	Augmentation
B	Samples of products	"Best Sellers…name of the products and their prices"	Augmentation
C	Samples of products	"What is new…name of the products and their prices"	Augmentation
D	Card	"order online now"	Clarification
E	Company's Car	"Order now for free next day delivery…"	Exemplification
F	Envelope	"Join our emailing list"	Enhancement

Figure A1.**87**: Officeworks Image-Text Analysis for Components (A...F)

A1.8 Summary

This appendix applied the systemic semiotic framework developed in Chapter 4 to 20 Australian websites in six business categories (Banking and Insurance, Telecommunications, Food, Transport and Tourism, Energy, and an Other category that consists of an electronics company, a car manufacturer and an office supplier company. A similar set of results for corresponding Saudi Arabian sites is provided in Appendix 3. Major comparisons and evaluations between Australian and Saudi Arabian websites are described in Chapter 5.

Appendix 2

Australian Web Pages Field and Tenor Relations

The field (A) and tenor (B) relations evident on selected Australian webpages are consolidated into this appendix in order to facilitate direct comparisons within and between different business categories. The field and tenor relations evident on selected Saudi Arabian webpages can be found in Appendix 4.

A) Field Relations

Key: *Media*: Textual, Image (inferred); *Field Complexity*: Isomorphic/Anisomorphic

#	Category	Section	Figure	Lexical Items	I/A
Banking and Insurance					
1	Commonwealth Bank	A1.2.1	A1.4 (A)	T: breast cancer; I: Family Activities	A
		A1.2.1	A1.1	T: Business Activity	I
2	National Australia Bank	A1.2.2	A1.5	T: Business Activity	I
3	ANZ	A1.2.3	A1.10	T: Business Activity	I
		A1.2.3	A1.14 (D)	T: Money Tracking, I:Banking Solutions	I
		A1.2.3	A1.14 (C)	T: Business Specialist, I: Small Business Solutions	I
4	Bankwest	A1.2.4	A1.19	T: Transaction Fee, I: Social Customers Solutions	I
5	AAMI	A1.2.5	A1.23 (E)	T: Renters, I:House Insurance Activity	I
Telecommunications					
6	dodo	A1.3.1	A1.27(A)	T: Galaxy, I:Using Samsung Pone	I
7	TPG	A1.3.2	A1.28	T: Using Internet activity-ADSL.	I
		A1.3.2	A1.28	T: Business Activity	I
8	Telstra	A1.3.3	A1.32	T: Business Activity	I
		A1.3.3	A1.35 (B)	T: Business Activity, I: Social Activity.	A
9	Optus	A1.3.4	A1.36	T: Business Activity	I
		A1.3.4	A1.39 (A)	T: Face of Prepaid, I: using prepaid mobile phone.	I
Food					

10	Dairy Farms	A1.4.1	A1.43 (C)	T: For Kids, I:Family consumption	I
		A1.4.1	A1.43 (B, D... F)	T: Products, I:Business Activity	I
11	Parmalat	A1.4.2	A1.47 (A)	I: Business Activity, I: Social Activity	A
		A1.4.2	A1.47 (C)	T: Children Food, I:Family consumption	I
		A1.4.2	A1.47 (E)	T: Students use; I: Cow Milking	A
12	Fleurieu	A1.4.3	A1.52 (E)	T: Iced Coffee, I:Ad for Iced coffee	I
Transport and Tourism					
13	Murrays	A1.5.1	A1.56 (B)	T: Business use; I: Environment Act	A
14	Platinum Australia	A1.5.2	A1.60 (C)	I: Business Activity, I: Social Activity	A
		A1.5.2	A1.60 (E)	I: Business Activity, I: Social Activity	A
15	Travelscene	A1.5.3	A1.64 (A)	T: Sale, I:Business for Buying tickets	I
		A1.5.3	A1.64 (B)	T: Financial Activity, I: Business Activity	A
Energy					
16	AGL	A1.6.1	A1. 65	T:Business Activity	I
		A1.6.1	A1.68	T and I:Business Activity	I
17	Energy Australia	A1.6.2	A1.69	T:Business Activity	I
		A1.6.2	A1.72	T: Cathy's Kitchen, I:Food(Cooking)	I
Others					
18	Leading Edge	A1.7.1	A1.77 (B)	T: Catalogue, I:Business Activity(sales)	I
		A1.7.1	A1.77 (C)	T: Security Activity, I:Busniess Activity	A
19	Holden	A1.7.2	A1.82 (A to I)	T: Products, I:Products and their Prices	I
20	Officeworks	A1.7.3	A1.87 (A to E)	T: Products, I:Business Activity	I
		A1.7.3	A1.87 (F)	T: Mailing List, I:Business and Ad	A

B) Tenor Relations

Key *Media:* Textual, Image (inferred); *Tenor Dimensions*: Contact (Occasional/Frequent); Affective Involvement (Low /High) and Power Relationship (Unequal/Equal); *Tenor Complexity*: Single/Multiple

#	Company	Section	Figure	Media (Tenor Dimensions)	S/M
Banking and Insurance					
1	Commonwealth Bank	A1.2.1	A1.4 (A)	T: Australia Breast Cancer Institute (O, H, E) I: Mother and Daughter (O, H, E)	M
		A1.2.1	A1.1	T: Customers (Personal, Business and Corporate) (O, L, U)	S
2	National Australia Bank	A1.2.2	A1.5	T:Customers (Personal and Business) (O, L, U)	S
3	ANZ	A1.2.3	A1.10	T:Customers (Personal and Business) (O, L, U)	S
		A1.2.3	A1.14 (D)	T: Simple Banking (F, H, E), I: 'Couple' Customers (F, H, E)	S
		A1.2.3	A1.14 (C)	T: Small Business(O, L, U) , I: Small Business Customers (O, L, U)	S
4	Bankwest	A1.2.4	A1.19	T:customers (F, H, E); I: customers (Husband and wife) (F, H, E)	S
5	AAMI	A1.2.5	A1.23 (E)	T: Renters (O, L, U); I: Tenants (O, L, U)	S
Telecommunications					
6	dodo	A1.3.1	A1.27(A)	T : Galaxy Users (F, H, U); I: Customers using Mobile social media (F, H, U)	S
7	TPG	A1.3.2	A1.28	T: Customers using home rental plans (O, L, U)	S
		A1.3.2	A1.28	T: Home and Business customers (O, L, U)	S
8	Telstra	A1.3.3	A1.32	T: Personal, Business, Enterprise and Government customers (O, L, U)	S
		A1.3.3	A1.35 (B)	T: Customers (O, L, U) , I: Women (O, H, E)	M
9	Optus	A1.3.4	A1.36	T: Personal and Business (O, L, U)	S
		A1.3.4	A1.39 (A)	T: Dollar Days Users (F, H, U); I: Prepaid mobile users (F, H, U)	S
Food					
10	Dairy Farms	A1.4.1	A1.43 (C)	T: For Kids (F, H, E); I:Kids Customers (F, H, E)	S
		A1.4.1	A1.43 (B, D... F)	T: Cream Customers (F, H, U);I:Customers (F, H, U)	S
11	Parmalat	A1.4.2	A1.47 (A)	I: Customers and families (F, H, E)	M
		A1.4.2	A1.47 (C)	T: Food for Children (F, H, E); I:Children customers (F, H, E)	S
		A1.4.2	A1.47 (E)	T:Students customers (O, H, U); I: Cow (F, L, E)	M

12	Fleurieu	A1.4.3	A1.52 (E)	T: Fleurieu Iced Coffee (O, L, U); I:Iced Coffee Customers (O, L, U)	S
Transport and Tourism					
13	Murrays	A1.5.1	A1.56 (B)	T: Customers (F, H, E); I: Environment people (O, H, U)	M
14	Platinum Australia	A1.5.2	A1.60 (C)	I: Customers and family's Friends (F, H, E)	M
		A1.5.2	A1.60 (E)	I: Customers and Couples (F, H, E)	M
15	Travelscene	A1.5.3	A1.64 (A)	T:Business Class (O, H, U); I: Business class customers (O, H, U)	S
		A1.5.3	A1.64 (B)	T: Finance people (O, H, U); I: Customers (O, L, U)	M

#	Company	Section	Figure	Media (Tenor Dimensions)	S/M
Energy					
16	AGL	A1.6.1	A1.65	T: Home and Business Customers (O, L, U)	S
		A1.6.1	A1.68	T: More Energy Efficient (F, H, E); I: Customers (O, L, U)	S
17	Energy Australia	A1.6.2	A1.69	T: Residential and Business (O, L, U)	S
		A1.6.2	A1.72	T: Cathay's Kitchen (F, H, E), I: Cookers Customers (O, L, U)	S
Others					
18	Leading Edge Electronics	A1.7.1	A1.77 (B)	T: Latest Catalogue (F, H, E), I: Customers (O, L, E)	S
		A1.7.1	A1.77 (C)	T: Policemen (F, H, E), I: Customers (O, L, E)	M
19	Holden	A1.7.2	A1.82 (A.to.I)	T: Holden Products (F, H, E), I: Customers (O, L, E)	S
20	Officeworks	A1.7.3	A1.87 (A to E)	T: Products (F, H, E), I: Customers (O, L, E)	S
		A1.7.3	A1.87 (F)	T: Join List (F, H, E), I: Customers and Other people (O, L, U)	M

Appendix 3
Saudi Arabian eBusiness Web Page Analyses

A3.1 Introduction

This chapter presents the results of an analysis of Saudi Arabian websites (Homepages) in line with the framework and methods developed in Chapter 4 of this thesis. Table A3.1 below, details the Saudi Arabian websites by category, representing the research sample and which provide the basis for the analysis.

Table A3.1: Saudi Websites analysed in this chapter organised by sector

A3.2	Banking	
A3.2.1	Alrajhi Bank	www.alrajhibank.com.sa/
A3.2.2	Samba Bank	www.samba.com/
A3.2.3	Alfaransi Bank	www.alfransi.com.sa
A3.2.4	Alahli Bank	www.alahli.com
A3.2.5	*Tawuniya*	www.ncci.com.sa
A3.3	Telecommunications	
A3.3.1	STC	www.stc.com.sa
A3.3.2	Atheer	www.atheer.net.sa
A3.3.3	Nesma	www.nesma.net.sa
A3.3.4	AwalNet	www.awalnet.com
A3.3.5	Naseej	http://esol.naseej.com
A3.4	Food	
A3.4.1	Almarai	www.almarai.com
A3.4.2	Nadec	www.nadec.com.sa
A3.4.3	Sadafco	www.sadafco.com
A3.5	Transport and Tourism	
A3.5.1	Saptco	www.saptco.com.sa/
A3.5.1	Fursan Travel	www.fursan.com.sa
A3.6	Energy	
A3.6.1	Gasco	www.gasco.com.sa
A3.6.2	Seco	www.seco.com.sa
A3.7	Others	
A3.7.1	AEC	www.aecl.com
A3.7.2	Sabic	www.sabic.com
A3.7.3	Jarir	www.jarirbookstore.com

A3.2 Banking and Insurance

A3.2.1 Alrajhi Bank

Al Rajhi Bank is one of the largest Islamic banks in the world. It was founded in 1957. Also, Al Rajhi Bank is one of the largest public joint stock companies in Saudi Arabia offering a wide range of banking and investment services all within the framework of Islamic Shariah principles. Al Rajhi Bank's services include financing solutions for cars, real estate, credit cards and Irad financing, Watani share purchase program; electronic banking services including Al Mubasher retail, SMS Tadawul, e-corporate, Eshaar and other related products; Al Rajhi Express; private banking services, and investment products featuring mutual funds, local shares and international brokerage. Headquartered in Riyadh, Al Rajhi Bank has six regional offices and supported by more than 500-branch network, 1,750 ATM machines, and over 13,000 POS installed with merchants all over the Kingdom. ALRAJHI has 8307 employees. It has a Paid-Up Capital of 15,000,000,000 SAR.

Page Design

The page design in Figure A3.1 contains three column panels of images which are connected to texts in the bottom about financial features and an image on the left which is connected to a text in the middle which contains a welcoming speech from bank director. Moreover, we see a main billboard image which is posted in the top of the website which shows the personal and business aspects of the bank. On the right side of the website, there are column panels of texts under each other that are related to services for personal and businesses in addition to useful links and latest offers. Moreover at the bottom, the prayer timetable is shown.

Page Wireframe and Components

The page wireframe in Figure A3.2 contains a local navigation, a logo, site search on the top. In addition to that, it contains a billboard image which facilitates the discovery process of knowing the features that are available for personal and businesses and a primary navigation on the middle. Next to the billboard image, we see the image of a credit card which presents a module of applying for a visa or master card. On the bottom of the page, we see three column panels headlines and all of them are connected to images which represent modules of applying for financial solution for personal. Under that, we can see an application that helps in organising the times for the prayers based on the date registered on the system. On the right side of the page, we can see many column panels headlines which facilitate the access of online services and latest offers.

Figure A3.1: Alrajhi Bank Page Design

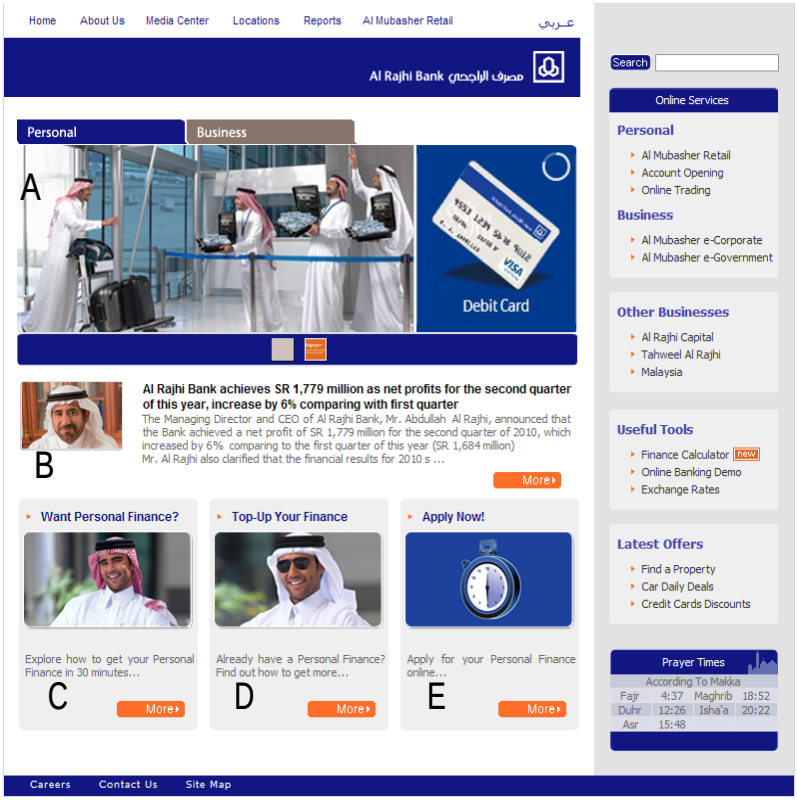
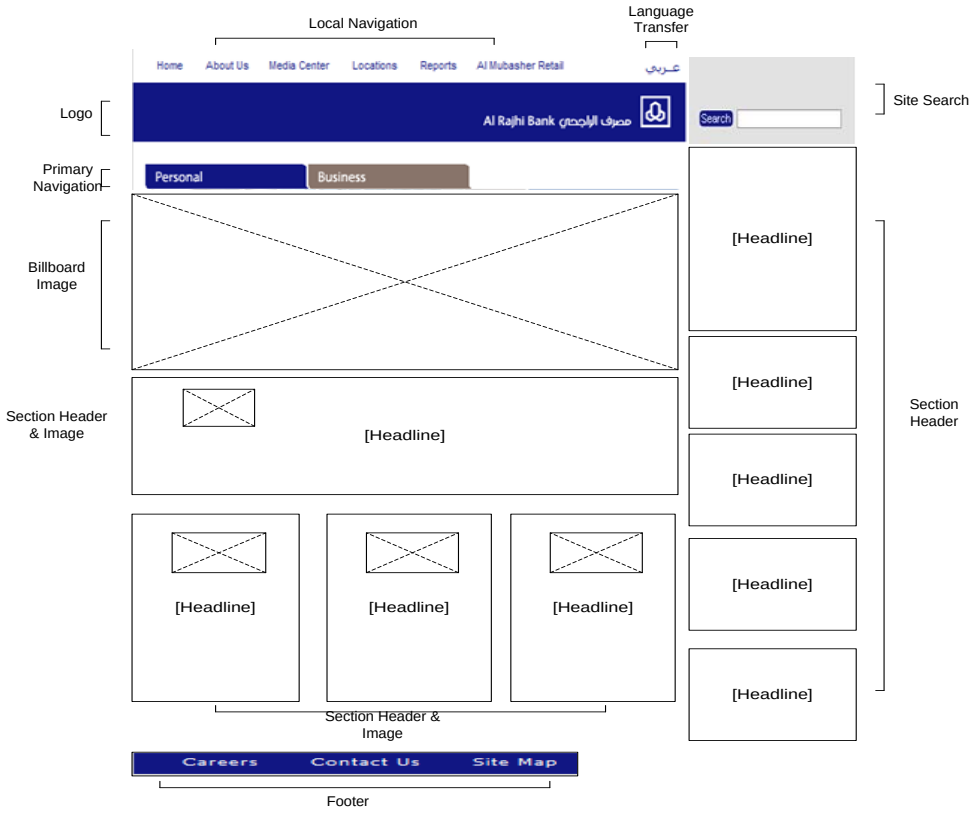


Figure A3.2: Alrajhi Bank Page Wireframe



Compositional Semantics

Vertical Axis

In Figure A3.1, the vertical axis is kind of strong because it starts on the top (first part of the site) with an image (A) that considered the most salient and it includes two pictures on it. The first picture of the image (A) (four men) and the second picture (debit card) reflect what so called the promise aspects regarding the simplicity of getting the money which shows the ideal situation of the bank towards the customers. The left picture of the image (four men) reflects the most heavily weighted on this site as it is on the top and on the left side of the image. The shape of the colour on that image is from less blue to more darkness at the bottom of the image. The hue of this colour reflects the vector that relates to the verbal text which is considered the second part (bottom) of the site. We can notice the sharp (wide) line or frame that separate the two parts (Photographic & Verbal). Here, four vectors can lead to the verbal part (the real side) of the company: the hue of the colour of the top image (A), the frame (wide line) that separates the top image from the verbal text, the picture of the (four men) and the same colour of the background of the image in the top (first part) is used again on the verbal text (second part) as a background in some images (man (C)-man with sun glasses(D)-clock(E)) in the bottom. We can notice the reading path vertically is circular. It starts with the picture on the left (four men) (A) then to the wide frame then to the picture on the right (debit card) to the picture on the left then to any other part of the site. The picture (B) on the middle (next to the opening speech) is considered less heavily weighted than the top image but is more heavily weighted than the three pictures on the bottom of the site (man(C)-man with sun glasses (D)- clock (E)).

Horizontal Axis

In Figure A3.1, in the left part we can see the image (B) (next to the opening speech) is less salient and less valued. Also, the three images next to each other (man(C)-man with sun glasses (D)- clock (E)) are considered less salient to more salient and real to ideal from left to right. The verbal text in the middle (opening speech) which is considered in this case the balancing centre of this site from the horizontal view will play as a kind of vector to guide to the bottom three images (man-man with sun glasses- clock). From that, we can figure the reading path horizontally which is a regular reading path from the left side image (B) to the verbal text (balancing centre) to the three images then to any other part in the site.

Home Page-Banner Image Analysis (A)

In Figure A3.1, the left picture of the image (four men) reflects the most heavily weighted on this site as it is on the top and on the left side of the image. We can notice the case of being less salient (four men) to more salient (cards). The image (four men) represents the real case and the image (cards) the ideal case. The third man from the left is considered the balancing centre. The hands of the men and the edges of the Gutra (traditional Saudi clothes over the head) are considered as vectors towards the cards. We can notice also the presence of the sharp line or the frame that separate the two pictures. The reading path here is circular as it goes around the men then to the cards then to the men again to any other part in the site.

Field and Tenor Relations

Field Relations for the components are listed in Appendix 4A (1). Tenor Relations for the components are listed in Appendix 4B (1).

Organising Schemes

In Figure A3.3, we notice that the navigation links in organising scheme (C) comprise a single Hybrid scheme consisting of two Ambiguous schemes (A), which is Ambiguous Audience-specific, and (B) which is Ambiguous Topical. In Figure A3.4 we identify organising schemes associated with a dialog for establishing an account with Alrajhi Bank. The dialogue itself (B) is Ambiguous Task-Oriented while the dropdown control showing nationality (A) is not surprisingly Exact Alphabetical.

Figure A3.3: Organising Scheme (1)

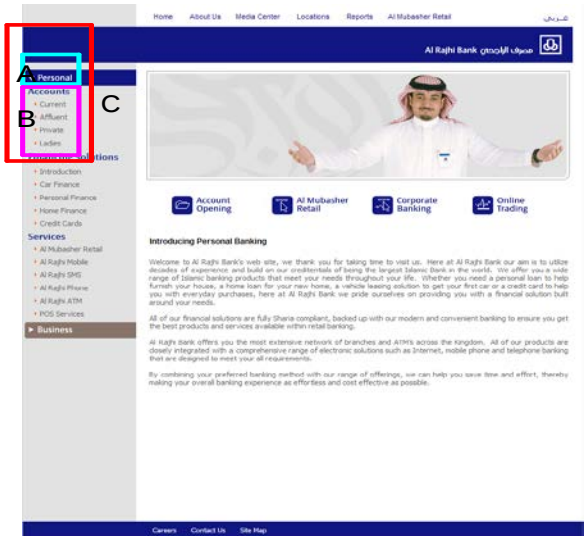


Figure A3.4: Organising Scheme (2)

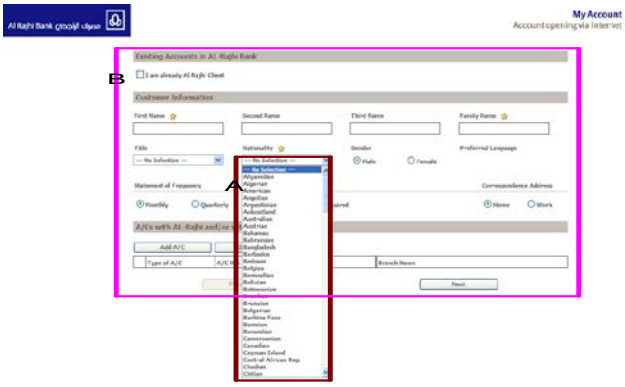


Image Analysis

In Figure A3.1 (A), this image represents a visual offer as it doesn't demand the viewer to enter into an imaginary relation with them and it is realised by absence of gaze at the viewer. Also, this image is seen from low angle so the viewer has less power over it and the image is seen from frontal angle which includes the level of involvement. Moreover, we can say that the social distance is represented here in a medium shot as the relation between the men is business relation and the modality here is unreal as the money in the suitcases is only just visible.

Image-Text Analysis

The image-text analysis shown in Figure A3.5 and is clarified in Table A3.2.

Figure A3.5: Alrajhi Bank Image Text analysis for Components (A...E)

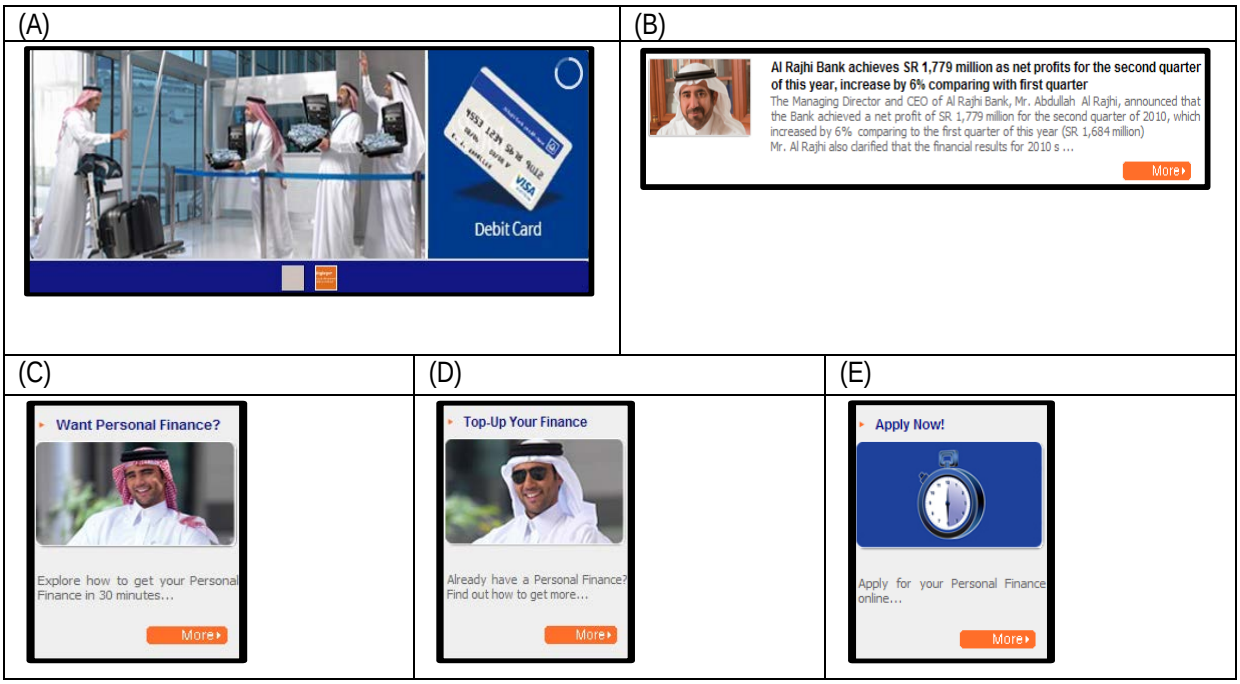


Table A3.2: Text-image Relations- Alrajhi Bank

	Image	Text	Relationship
A	Four men	No Text	N/A
A	Card	"Debit card"	Exemplification
A	Card	"Debit card"	exposition
B	Man	"Alrajhi Bank Achieves ..."	augmentation
C	Man Smiling	"Want Personal Finance..."	divergence
D	Man with Glasses	"Top-Up Your Finance..."	divergence
E	Clock	"Apply Now…"	enhancement

A3.2.2 Samba

Samba Financial Group (SAMBA) is a Saudi Arabian public joint stock company engaged in providing a wide range of banking and financial services. It specializes in providing financial and banking services to people and businesses locally and globally. SAMBA's principal activities are conducted through three major internal groups; the Corporate and Investment Banking Group (CIBG), which provide financial products and services to domestic and international entities; Private Banking & Investment Management Group, offering private banking products and services, brokerage services and asset management, and the Treasury Group. In addition, SAMBA offers non-interest based banking products that are approved and supervised by an independent Islamic Sharia board established by the bank. SAMBA also operates a wholly owned subsidiary, Samba Fund Management Limited (Guernsey), specializing in mutual funds. SAMBA's head office is in Riyadh and has 82 branches and 36 remittance centres (SpeedCash) all over the Kingdom in addition to one branch in London. Samba Financial Group was formed in 1980. SAMBA has 3120 employees. It has a Paid-Up Capital of 9,000,000,000 SAR.

Page design

The page design in Figure A3.6 consists of two images that are connected to text at the bottom of the page related to online security and credit cards. A primary image is positioned at the top of the page and represents the welcoming aspect of being a SAMBA customer. On the right hand side of the page, there is text related to online services (log-in) for both individuals and corporate customers. Also, four column panels of text related to bank news, offers, and credit cards are located in the middle of the page.

Page Wireframe and Components

The page wireframe in Figure A3.7 consists of a local navigation system, a logo, a site search facility and language translator at the top of the page. In addition, it contains a billboard image and a primary navigation system, also located at the top of the page. In the middle of the page, four column panel headlines facilitate applications for SAMBA offers and products. At the bottom of the page, two section headers are connected to images that represent applications for credit cards and a "set up security" system for online services. On the right hand side of the page, a column panel header representing a module which facilitates the implementation of account log in is visible.

Compositional Semantics

Vertical Axis

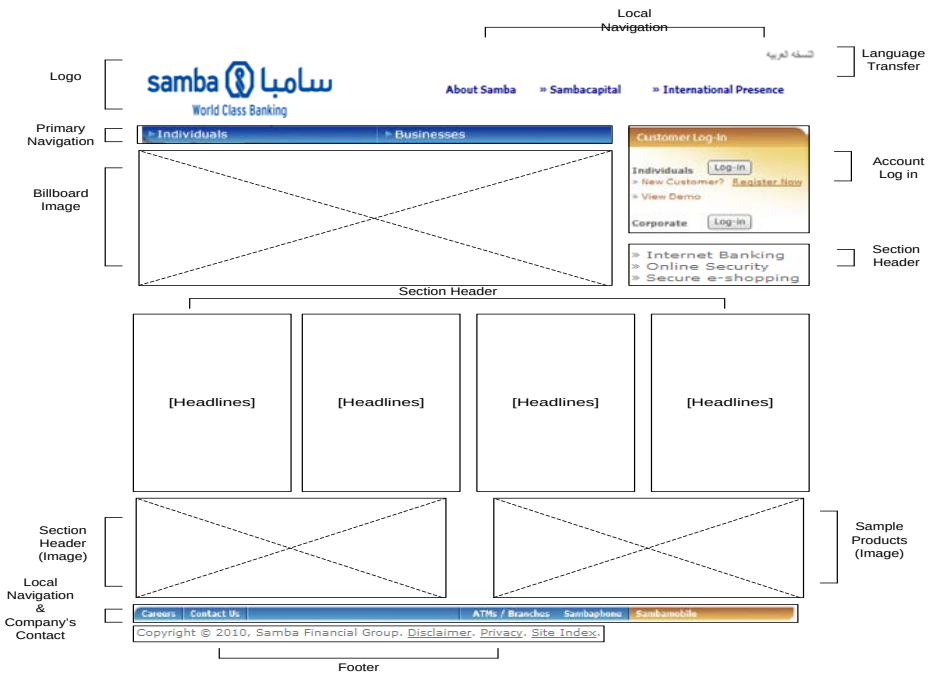
In Figure A3.6, the vertical axis is considered strong because it begins at the top (first sector) of the page with an image (A) that is considered the most salient image on the page. This image represents SAMBA's promise aspects regarding the quality of financial solutions services which reflects the ideal situation of the bank towards its customers. The picture on the left hand side of image (A) (two men) represents the most heavily weighted on the page because of its prominent position at the top of the page and to the left side of the image. The colour of image (A) ranges from dark blue to a lighter blue at the bottom of the image and the colour reflects the vector that relates to the text located at the bottom (second sector) of the page. A sharp line or frame separates the two areas (image and text). Four vectors lead to text on the company, the hue of the colour of the image (A) at the top of the page, the frame (line) that separates the top image (A) from the text area, the picture of the table in the image of the (two men) (A) and the same colour of the background of image (A) that is used again in some text at the bottom of the page as a background. The reading path vertically, is regular and starts with image (A) (picture of two men) at the top of the page, then to the frame, then on to other areas of the page. The text in the middle of the page is considered less heavily weighted than image (A) at the top of the page, but is more heavily weighted than the two images located at the bottom of the page.

Horizontal Axis

In Figure A3.6, Image (B) (lock inside computer) positioned at the left of the page is considered less salient and less valued than image (C) (cards) located on the right hand side of the page. Images are considered less salient to more salient and real to ideal moving from left to right. The text block in the middle of the page, which is considered in this case, the balancing centre of the page from a horizontal view acts as a kind of vector to guide the viewer to the two images located at the bottom of the page. The reading path horizontally,

Figure A3.6: Samba Bank Page Design

Figure A3.7: Samba Bank Page Wireframe



which is a regular reading path from image (B) (a locker inside the laptop) positioned at the left side of the page, to image (C) (Samba Credit Cards), to the text block (balancing centre), then on to other areas of the page.

Home Page-Banner image Analysis (A)

In Figure A3.6, the picture to the left of image (A) (two men) reflects the most heavily weighted on the page because of its prominent position at the top of the page. Viewing from the picture to the left of the image (two men) to the picture on the right (Logo) is moving from the less salient and less ideal to the more salient and more ideal aspects of the main image. The slight line frame visible between the two pictures acts as a separator. The picture to the right of image (A) (Logo) represents the balancing centre of the image. The suitcase and the flower table in the picture of the two men are considered as vectors toward the second picture (Logo). The reading path in this case is regular, moving the viewer from the picture of the image two men located to the left of the image, to the second picture (Logo), then on to other areas of the page.

Field and Tenor Relations

Field Relations for the components are listed in Appendix 4A (2). Tenor Relations for the components are listed in Appendix 4B (2).

Organising Schemes

Figure A3.8 shows an Exact Chronological organising scheme depicting news items. Figure A3.9 shows an Ambiguous Audience-specific scheme, used to segment types of customers for the purpose of providing them with relevant information. Figure A3.10 depicts an Ambiguous Metaphor-driven scheme used to organise material on the Banking Services page.

Image Analysis

In Figure A3.6, image (A) represents a visual offer because doesn't demand the viewer to enter into a relationship with tit and is realised by the absence of a gaze at the viewer. Also, this image is seen from a low angle so the viewer has less power over it and from an oblique angle which excludes the level of involvement. Moreover, the social distance is presented here in a long shot as it represents the public aspects of the site. The modality here is real.

Image-Text Analysis

The image-text analysis is shown in Figure A3.11 and clarified in Table A3.3.

Table A3.3: Text-image Relations- Samba

	Image	Text	Relationship
A	Two men	"Samba"	Divergence
B	a locker inside the laptop	"Designate a Computer as Safe"	Enhancement
C	Samba Visa and Samba Master Card	"Samba Credit Cards. The Best Way to Pay"	Augmentation

Figure A3.8: Organising Scheme (1)

Figure A3.9: Organising Scheme (2)

Figure A3.10: Organising Scheme (3)

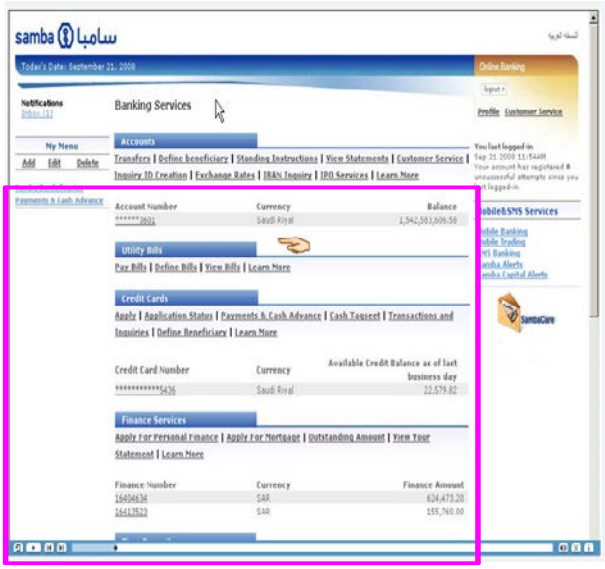


Figure A3.11: Samba Bank Image-Text analysis for Components (A...C)

(A)	(B)	(C)
		

A3.2.3 Alfaransi Bank

Alfaransi Bank is a Saudi Arabian Joint Stock Company which was established in 1977. Alfaransi a full service commercial bank serving the local and international banking needs of its clients. It is a leading provider of comprehensive financial services and products in the kingdom of Saudi Arabia and other markets. In the area of Islamic banking services, Banque Saudi Fransi had made considerable improvement in the development of products and services including enhancements of its branches to comply with the provisions of Islamic Sharia and to provide alternative products to companies and individuals including investment and treasury services. Alfaransi has 363 ATMs and 5,029 Point of Sale (P.O.S.) terminals, 78 branches, 2,445 employees and paid-up capital of 7,232,143,000 SAR.

Page Design

The page design in Figure A3.12 consists of a primary image which is connected to text related to the bank's partners positioned at the bottom of the page and a primary image which is positioned at the top of the page. On the right side of the page, there is text related to credit cards which is connected to an image (B). Also, there are four column panels of text located at the bottom of the page, which are related to bank news, offers, services and products.

Page Wireframe and Components

The page wireframe in Figure A3.13 consists of a local navigation system, a logo, site search facility and language translator located at the top of the page. In addition, there is a billboard image and a primary navigation system, also located at the top of the page. In the middle of the page, are has four column panel headlines of which two are connected to images. All four panels present modules providing access to the bank's news, information and online services. The bottom of the page contains the page footer. On the right side of the page, an image (B) which represents a credit card application system.

Compositional Semantics

Vertical Axis

In Figure A3.12, the vertical axis is deemed strong because it begins at the top (first sector) of the page with an image (A) that is considered the most salient. The first image (horses) (A) and the second image (cards) (B) reflect Alfaransi's promise regarding the bank's confidence and service strength which reflects the ideal situation of the bank towards its customers. Image (A) (horses) reflects the most heavily weighted on the page because of its prominent position at the top of the page. This image (A) is also considered the balancing centre of the page. The colour used in image (A) is represented by a black horse in the middle and two lighter coloured horses on either side. The black horse in the middle reflects the vector that relates to the text at the bottom of the page which is considered the second sector of the page. A sharp line or frame separates the two sectors (image and text). Here, six vectors lead to text about the company, the different shades used in image (A) (horses), the frame (line) that separates the top image (A) from the text, the picture of the black horse, the legs of the white horse, the red line in "Tradition" leads to another red line in the text, and the same colour of the background colour used in image (A) is used again in the text block as a background colour in the image (C) (race car) at the bottom of the page. The reading path vertically, is circular, beginning with the picture (black horse) in the middle of image (A), then to the two

Figure A3.12: Alfaransi Bank Page Design

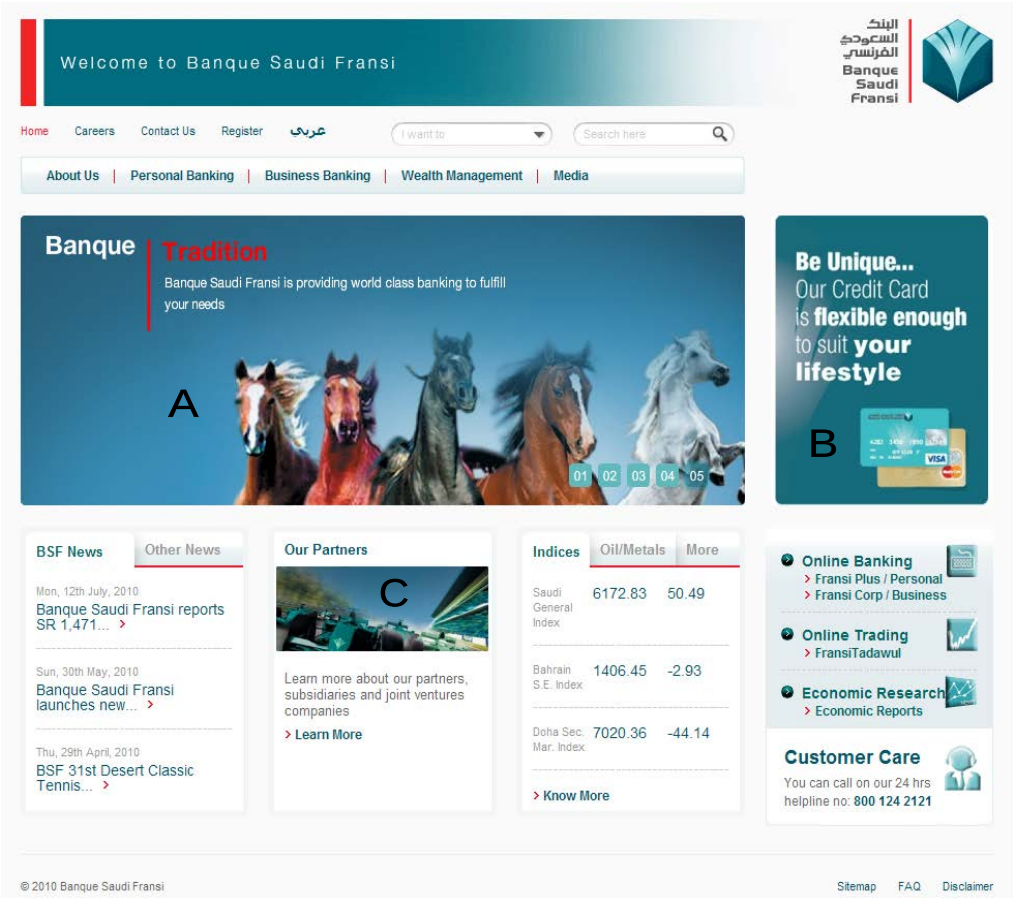
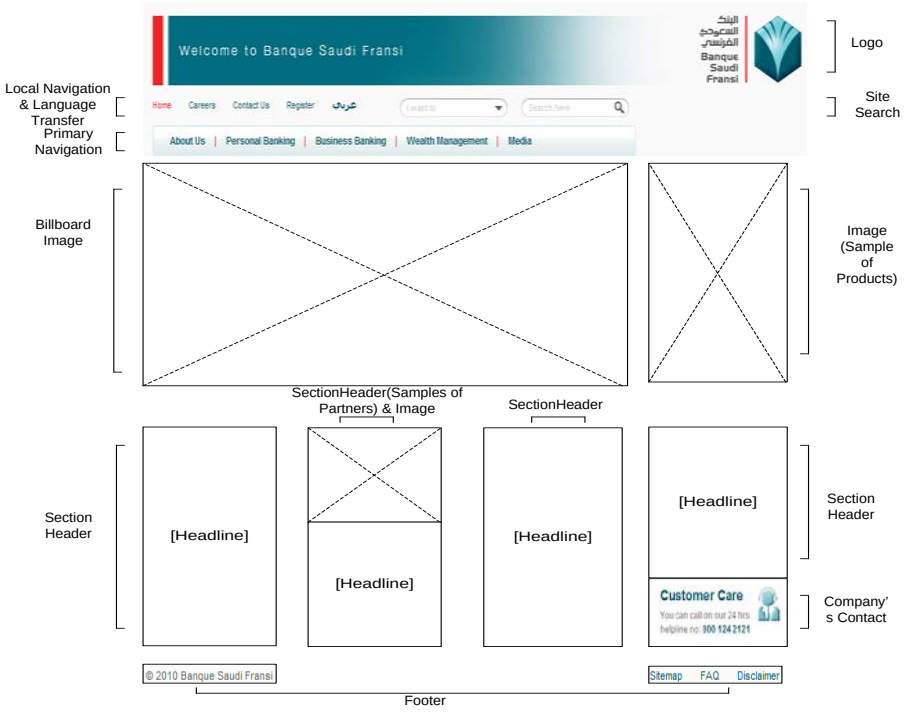


Figure A3.13: Alfaransi Bank Page Wireframe



horses on the right of image (A), to image (B) (cards) on the right side of the page, to the left two horses in image (A), then on to other areas of the page. In addition, the image at the bottom of the page, (race car) is considered less heavily weighted than image (A) positioned at the top of the page.

Horizontal Axis

In Figure A3.12, on the left hand side of the page, image (C) (race car) is the most salient but less valued and less ideal than the right side of the site. From the horizontal view, the two red lines will play as a kind of vector to guide to the image (C) (race car). From that, we can figure the reading path horizontally which is a regular reading path from the image (C) (race car) to the left side text to the red lines to any other part in the site.

Home Page-Banner Image Analysis (A)- In Figure A3.12, the left picture of the image (horses) reflects the most heavily weighted on this site as it is on the top and on the left side of the image. Going from the left picture of the image (horses) to the right picture of the image (cards) is moving from less salient and less ideal to more salient and more ideal aspects of the main image. The sharp (wide) line frame between the two pictures in the main image separates the two pictures in the main image. The left picture of the main image (horses) includes the balancing centre of the image (brown horse-fourth horse from the left). Also, the legs and the eyes of the fifth (white) horse from the left of the (horses) picture of the main image are considered as vectors toward the second image (cards). In this case, the reading path in this case is regular. It moves from the left image (horses-horse by horse) to the second image (cards) to any other part of the site.

Field and Tenor Relations

Field Relations for the components are listed in Appendix 4A (3). Tenor Relations for the components are listed in Appendix 4B (3).

Organising Scheme

In Figure A3.14, an Exact Chronological scheme is used to organise the News items on the homepage.

Image Analysis

In Figure A3.12, image (A) represents a visual demand as it demands the viewer to enter into a relationship with it and is realised by a gaze at the viewer. Also, this image is seen from a low angle so the viewer has less power over it and from a frontal angle which includes the level of involvement. Moreover, the social distance is presented here in a close shot as it represents the intimate and personal aspects of the bank's relationships with its customers. The modality here is real.

Figure A3.14: Alfaransi Bank Organising Scheme

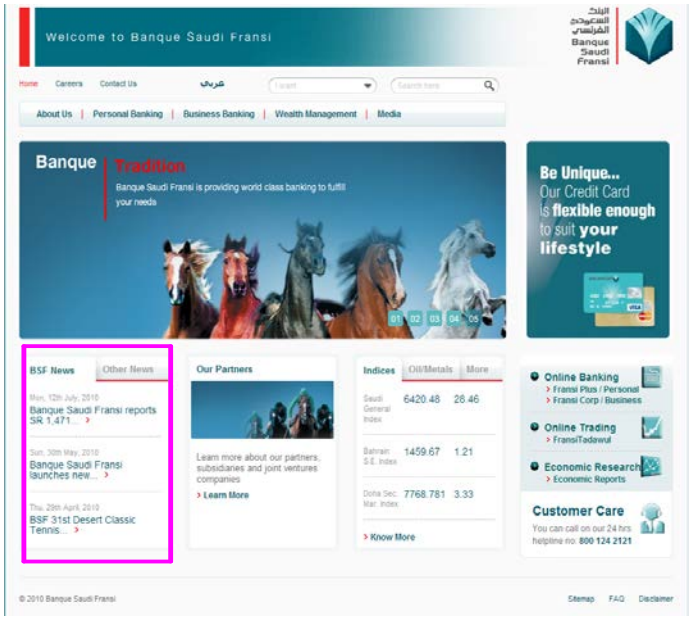


Image-Text Analysis

The image-text analysis is shown in Figure A3.15 and clarified in Table A3.4.

Figure A3.15: Alfaransi Bank Image-Text analysis for Components (A...C)

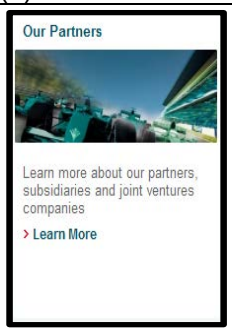
(A)	(B)	(C)
		

Table A3.4: Text-image Relations- Alfaransi Bank

	Image	Text	Relationship
A	Horses	"Tradition…Banque Saudi…"	Exemplification
B	Banque Visa & MasterCard	"Be Unique… Our Credit…"	Augmentation
C	Racing car	"Our Partners...Learn more..."	Divergence

A3.2.4 Al-Ahli Bank

The National Commercial Bank (Al-Ahli) is the most prominent of Saudi banks and was the first bank established in Saudi Arabia. NCB operates 282 branches throughout the Kingdom, dedicated exclusively to Islamic Banking services. The Bank operates two international branches located in Beirut and Bahrain, as well as 3 representative offices in London, Seoul, and Singapore. NCB has acquired a 64.68% share holding in Türkiye Finans Katılım Bankası, Turkey's leading Islamic Bank. The Bank operates a comprehensive array of alternative delivery channels such as Al-Ahli Telephone Banking, Al-Ahli Mobile Banking, Al-Ahli Online, Al Ahli eCorp, Al-Ahli ePay, Al-Ahli Tadawul, Al-Ahli International Brokerage. Since the beginning of the 90's, NCB has been one of the pioneers in Islamic Banking, providing a wide range of innovative Islamic alternatives for various traditional services and products. The Bank is the biggest Financial Asset Manager in the Arab region and it is the first to offer mutual funds in the Kingdom. The Bank initiated business in 1953. NCB has 5,399 employees and has a paid-up capital of 15,000 million SAR.

Page Design

The page design in Figure A3.16 comprises three images which are connected to text located in the far right bottom section of the page, regarding community participation, opening an account and the bank's financial solutions. Moreover, a primary image which is positioned at the top of the page, comprising a father and a mother with their children. Four column panels of text located at the bottom of the page relate to bank news, offers, services and products. Positioned to the far right of the top of the page is a user "login" link.

Page Wireframe and Components

The page wireframe in Figure A3.17 consists of a local navigation system, a logo and site search facility at the top of the page. In addition, it contains a billboard image and primary navigation system, also located at the top of the page. In the middle of the page, four column panels of headlines which facilitate the process of applying for the bank's products and services are detected. To the far right of the page, a column panel headline of three images (B, C and D) which detail the bank's social responsibility policy and access to an online account opening facility. At the bottom of the page, there is a footer and section header. At the top right hand side of the page is a header related to a module which facilitates the process of 'log on' access.

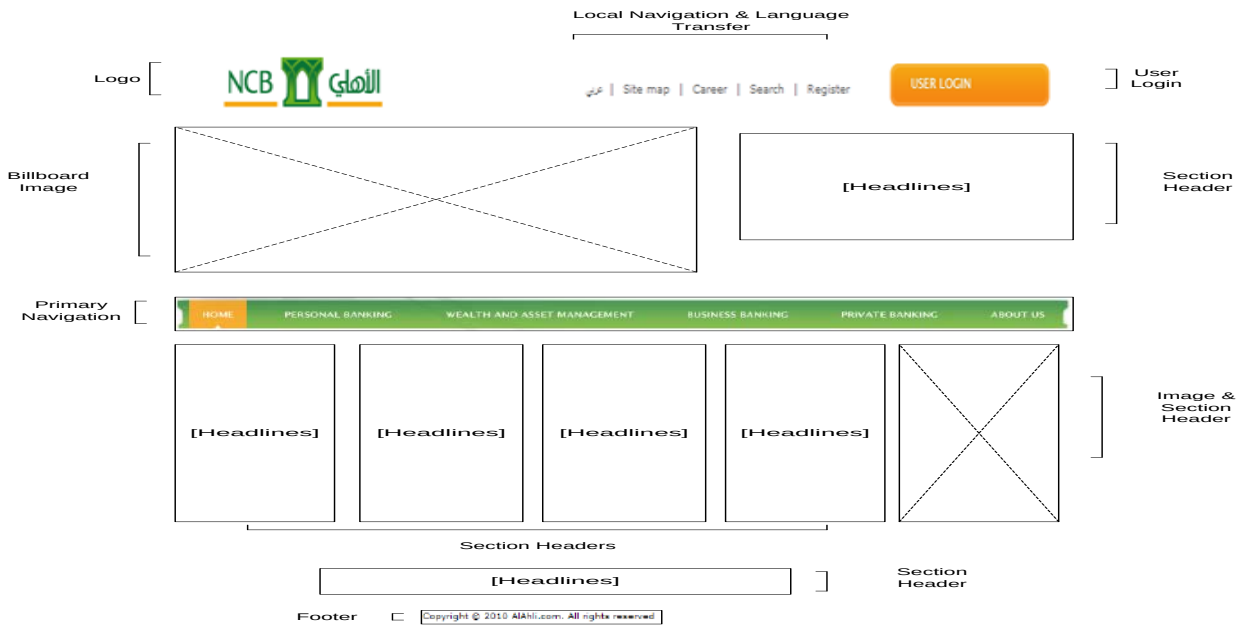
Compositional Semantics

Vertical Axis

In Figure A3.16, the vertical axis is deemed strong because it begins at the top (first sector) of the page with an image (A) that is considered the most salient. This image reflects the bank's service promise regarding the simplicity of obtaining money from the bank, which reflects the ideal situation of the bank towards its customers. This image represents the most heavily weighted on the page because of its prominent position at the top left hand side of the page. The hue of the colour on the image (A) ranges from deep at the top, to lighter at the bottom. The hue of this colour reflects the vector that relates to text located at the bottom of the page. A sharp line or frame separates the two sectors of the page (image and text). Five vectors lead to text on the company, hue of the colour in the top image (A), the frame (line) that separates

Figure A3.16: Al-Ahli Bank Page Design

Figure A3.17: Alahli Bank Page Wireframe



the top image (A) from the text, the colour of the sand in the top image (A), the same colour used for the background of image (A) (first sector) is used again in the text (in the second sector) as a background in some of the other images on the page and the hands of the small

girl (image A). The reading path vertically, is regular beginning with the image at the top of the page, to the frame, to the image (B) (Same day Finance) at the bottom right of the page, then on other areas of the page. The image (B) (Same day Finance) at the bottom right of the page is considered less heavily weighted than image (A) at the top of the page, but is more heavily weighted than the last two images (C) (NCB in the community) (D) (Account Opening Online) at the bottom of the page.

Horizontal Axis

In Figure A3.16, Image (B) (Same day Finance) positioned to the right of the page, is deemed more salient and more valued. Images are considered less salient to more salient and real to ideal moving from left to right. The text in the middle of the page (Business Banking) which is considered in this case the balancing centre of this site from the horizontal view, acts as a kind of vector to guide the viewer to other areas of the page. The reading path horizontally is a regular reading path moving from the text on the left hand side of the page to the images (B, C and D) on the right side of the page and to others of the page.

Field and Tenor Relations

Field Relations for the components are listed in Appendix 4A (4). Tenor Relations for the components are listed in Appendix 4B (4).

Organising Schemes

In Figure A3.18, several types of Organising Schemes are evident on the Al-Ahli bank homepage. Scheme (C) Hybrid consists of two ambiguous schemes, (A) Ambiguous Audience-specific and (B) Ambiguous Topical.

Image Analysis

In Figure A3.16, image (A) represents a visual offer, realised by the absence of a gaze at the viewer. Also, this image is seen from a low angle so the viewer has less power over it and from a frontal angle which includes the level of involvement. Moreover, the social distance is presented here in a close shot as it represents the intimate and personal aspects of the family. The modality here is real.

Image-Text Analysis

The image-text analysis is shown in Figure A3.19 and clarified in Table A3.5.

Figure A3.18: Alahli Bank Organising Scheme

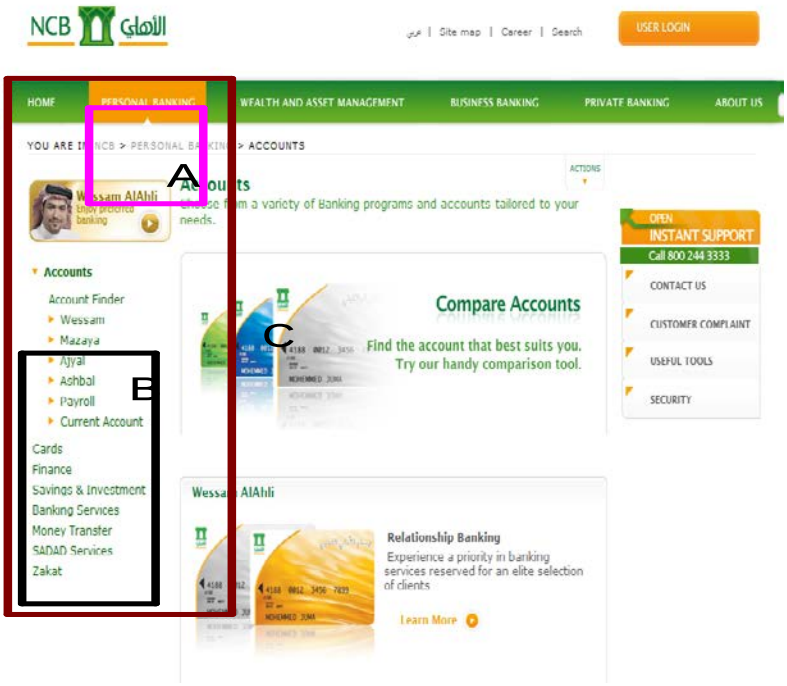


Figure A3.19: Al-Ahli Bank Image-Text analysis for Components (A...D)

Table A3.5: Text-image Relations- Al-Ahli Bank

	Image	Text	Relationship
A	Parents with their children	"Our People, Our Future…"	Enhancement
B	Man smiling	"Same day…"	Divergence
C	people with the Saudi flag with them	"NCB in the Community…"	Enhancement
D	Man working on a screen	"Account Opening Online ..."	Augmentation

A3.2.5 Tawuniya

The Company for Co-operative Insurance (Tawuniya) is a Saudi public joint stock company which transacts in co-operative insurance operations and all related activities such as

reinsurance or agency activities. CCI's principal lines of business include motor, marine, fire, medical, engineering, aviation, takaful, and casualty insurance. The company was established in 1986 and was formed to develop the Saudi insurance industry and to set standards for optimal insurance services. Tawuniya has 740 employees and a Paid-Up Capital of 500,000,000 SAR.

Page Design

The page design depicted in Figure A3.20 comprises a primary image positioned in the top right hand side of the page heralding the "opening" of new packages for customers. In the middle of the page, two column panel headlines which contain four images (B, C, D and E) connected to text related to the companies' e-services, products, claims, and branches. There are also several texts located on the left hand side of the page which are related to information on the company and news.

Page Wireframe and Components

The page wireframe in Figure A3.21 consists of a language translator, a logo, and a site search facility located at the top of the page. In addition, there is also a billboard image (A) at the top right of the page and a primary navigation system at the top left side of the page. In the middle of the page, there are four section headers with associated images which represent modules for access to the company's e-services, subscribing for new products, issuing claims, and finding branches. Next to these headers on the left hand side of the page are two column panel headers which enhance access to "news" and a company contact. A page footer is evident at the bottom of the page.

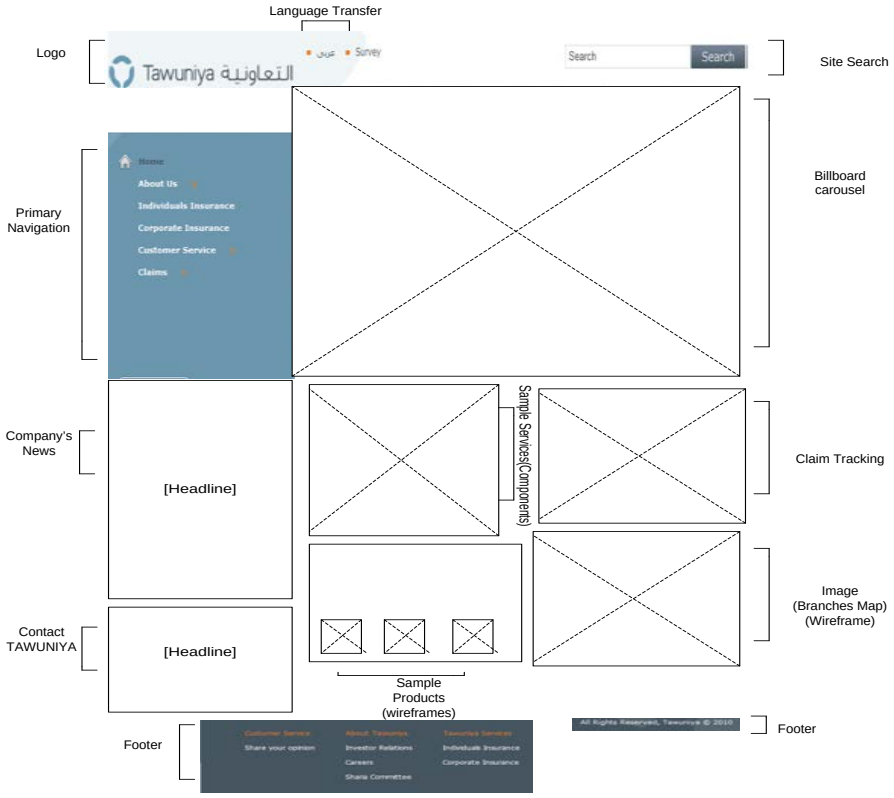
Compositional Semantics

Vertical Axis

In Figure A3.20, the vertical axis is considered strong because it begins at the top (first sector) of the page with an image (A) that is considered the most salient and represents the companies promise related to the simplicity of having "long run safety" which reflects the ideal position of the company towards its customers. This image represents the most heavily weighted on the page because of its prominent position at the top of the page. The hue of the colour used in this image (A) reflects the vector that relates to the text located at the bottom (second sector) of the page. A sharp line or frame separates the two sectors (image and text). Four vectors lead to information (text) on the company, the hue of the colour used in the top image (A), the frame (line) that separates the top image from the text, the edge of the "OPEN" sign in image (A), and the same colour used in the background of the image (A) (first sector) is used again in the text (second sector) and as a background colour at the bottom of the page. The reading path vertically, is circular beginning with image (A) then moving to image (E) then to image (B) and then on other areas of the page. The three small images under "Types of products" (D) are considered less heavily weighted than any other image on the page.

Figure A3.20: Tawuniya Page Design

Figure A3.21: Tawuniya Page Wireframe



Horizontal Axis

In Figure A3.20, image (E) located at the bottom right of the page, is the most salient and most valued. Also, the three images adjacent to each other in "Types of products" (D) are considered less salient to more salient and real to ideal moving from left to right. Image (B) (mouse) in the middle of the page which is considered in this case the balancing centre of the page from the horizontal view acts as a kind of vector to guide the viewer to the four images (Types of products (D) and map (E)) situated at the bottom of the page. The reading path horizontally, is a regular reading path moving from the text on the left hand side of the page to other areas on the page.

Field and Tenor Relations

Field Relations for the components are listed in Appendix 4A (5). Tenor Relations for the components are listed in Appendix 4B (5).

Organising Schemes

As depicted in Figure A3.22, Tawuniya news items are organised using an Exact Chronological Organising scheme. Locations of branches and head office under the "Contact Us" navigation option are organised using an Exact Geographical scheme (refer to Figure A3.23). In Figure A3.24 an Ambiguous Topical organisation scheme is used to organise local the navigation link (B) (Motor, Medical and Takaful, Property and Casualty). For the Motor insurance link (A), Exact Alphabetical and Ambiguous Audience-specific (C) organising schemes are used. Collectively, this assemblage forms a Hybrid, D.

Image Analysis

In Figure A3.20, image (A) represents a visual offer that is realised by the absence of a gaze at the viewer. Also, this image is seen from a low angle so the viewer has less power over it and from a frontal angle which includes the level of involvement. Moreover, the social distance is presented here in a medium shot as it represents the business aspects of the company. The modality here is unreal.

Image-Text Analysis

The image-text analysis is shown in Figure A3.25 and clarified in Table A3.6.

Table A3.6: Text-image Relations- Tawuniya

	Image	Text	Relationship
A	OPEN	"Shopowners'…Do not…"	Divergence
B	Mouse connected to wWw	"eServices for…"	Augmentation
B	Locker	"Enter My Account"	Enhancement
C	Question Mark	"Track your claim"	Enhancement
D	Samples of products	"Types of products"	Exemplification
E	Map	"…branches"	Clarification

Figure A3.22 Organising Scheme (1)

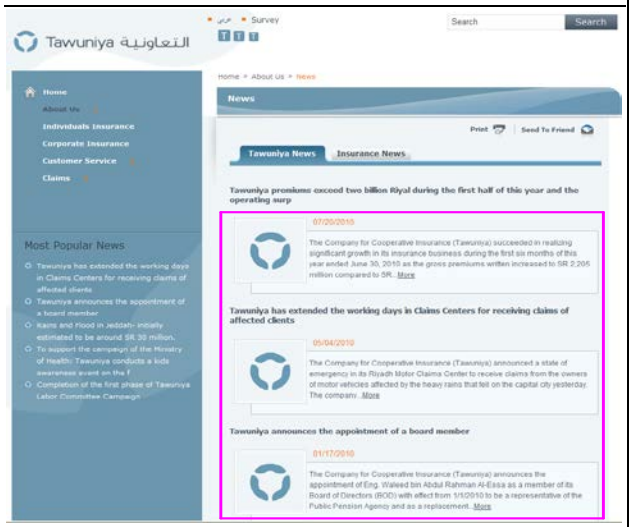


Figure A3.23 Organising Scheme (2)

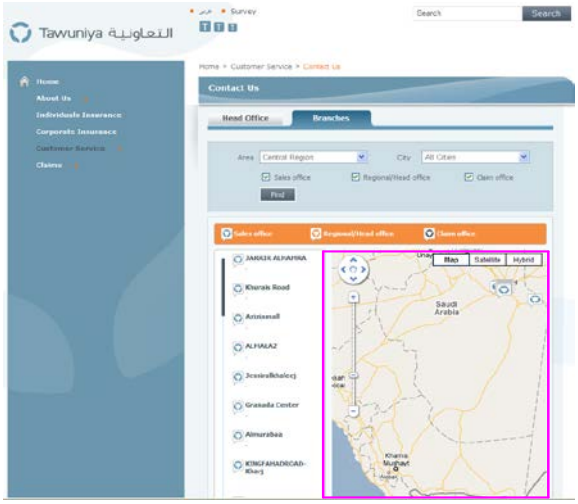


Figure A3.24: Organising Scheme (3)

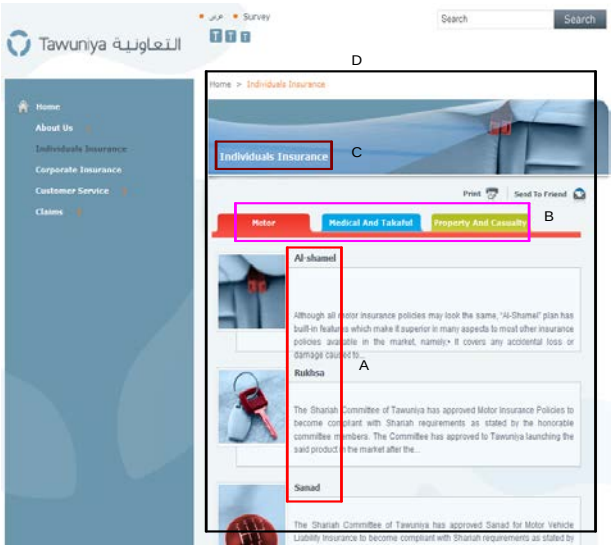
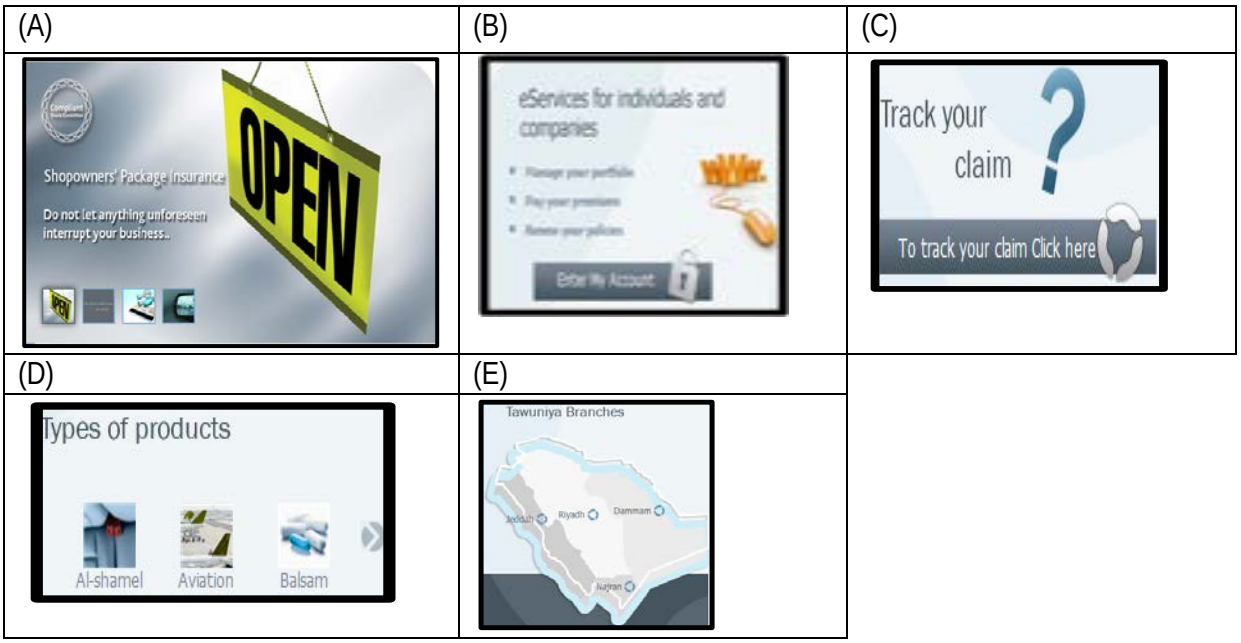


Figure A3.25: Tawuniya Image-Text analysis for Components (A...C)



A3.3 Telecommunications

A3.3.1 Saudi Telecommunications Company (STC)

STC is the oldest and biggest Telecom Company in Saudi Arabia, covering all the cities of the Kingdom. STC is a Saudi-based telecommunications company that offers landline, mobile and Internet services. STC operates through its five business units: Al Hatif, which includes landline services, card phones, public telephones, prepaid card services and business services; Al Jawal, which offers a range of mobile services, including Family Al Jawal, Sawa, messaging services, business services, data services and roaming services; Saudi Net, an Internet provider, STC Online for electronic bills payment services and Saudi Data, a provider of data solutions. STC has an outstanding worldwide existence in more than ten countries with a high population, including KSA, Bahrain, Kuwait, India, Indonesia, Malaysia, Turkey, South Africa, Jordan and Lebanon. STC was incorporated in 1998 and a national provider of telecommunication services in the Kingdom of Saudi Arabia. STC's primary business centres on four units: Personal, Home, Enterprise, and Wholesale. STC has around of 21,190 employees and has a Paid-Up Capital of 20,000,000,000 SAR.

Page Design

The page design in Figure A3.26 consists of three images at the bottom of the page (B, C and D) which are connected to text related to advertisements of STC's products (eg. iPhone 4). Moreover, a primary image (A) positioned at the top of the page has a relationship to a smiling man looking down to his dream house. In addition, a site search function is evident at the top of the page. On the left hand side of the page, there are column panels of text which are related to company news, contacts, and services.

Page Wireframe and Components

The page wireframe in Figure A3.27 consists of a customer type function, a logo, a site search facility and language translator, located at the top of the page. In addition, there is a billboard image and a primary navigation system, also located at the top of the page. In the middle of the page, is a section header containing components which enable access to STC's online services. At the bottom of the page, three column panels of images (advertisements) that allow the use of sample services and products, as well as footer are visible. On the bottom left bottom side of the page are several section headers which comprise text which provides access to the company's contacts, news, and services.

Compositional Semantics

Vertical Axis

In Figure A3.26, the vertical axis is considered strong because it begins at the top (first sector) of the page with an image (A) that is considered the most salient and reflects STC's promise regarding the simplicity of accessing communication services which represents the ideal position of the company towards its customers. This image (A) represents the most heavily weighted on the page because of its prominent position at the top of the page. The hue of the colours (rainbow) in the image reflects the vector that relates to the text located at the bottom (second sector) of the page. A sharp line or frame separates the two sectors (image and text). Four vectors lead to information (text) on the company, the hue of the colour in image (A), a frame that separates image (A) from the text, the rainbow and the building in image (A) image and the use of the same colour of the background in the image (A) is used again in the text as a background colour in some of the images at the bottom of the page. The reading path vertically, is circular, starting with image (A) then following the direction of the rainbow to image (B), back to image (A), to image (D), then to image (C) and on to other areas of the page. The three images (B, C and D) located at the bottom of the page are considered less heavily weighted than image (A) located at the top of the page.

Horizontal Axis

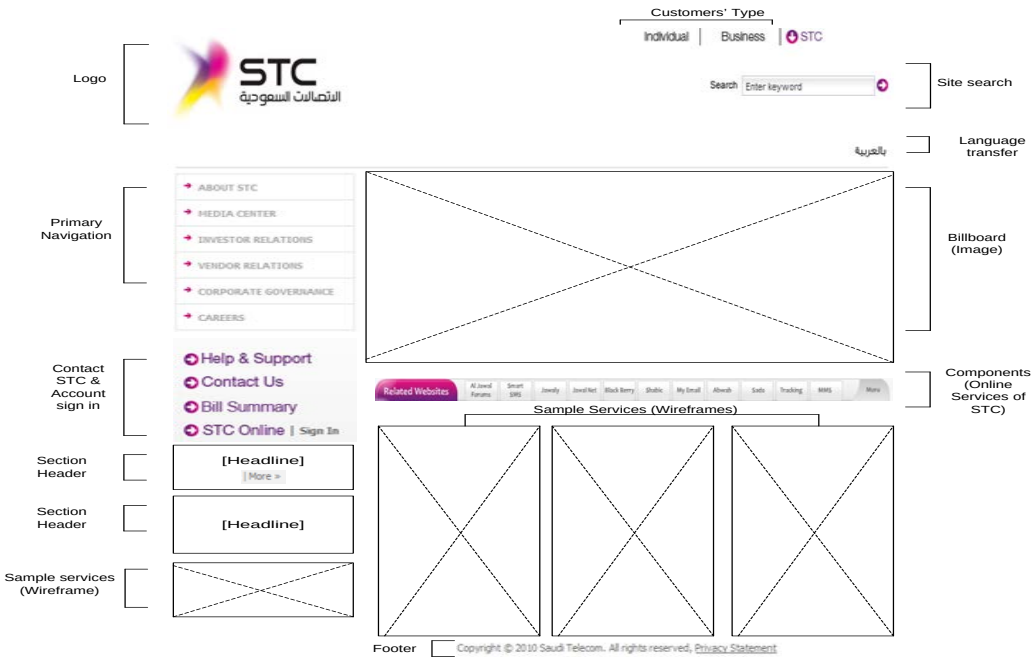
In Figure A3.26, on the right hand side of the page, image (D) (iPhone) is considered the most salient and most valued. Also, the three images (B, C and D) adjacent to each other at the bottom of the page are considered less salient to more salient and real to ideal moving from left to right. The two images (B and C) in the middle of the page which are considered in this case the balancing centre of the page from the horizontal view act as a kind of vector to guide the viewer to other areas of the page. The reading path horizontally is a regular reading path from the image of the four men (B) to other areas of the page.

Field and Tenor Relations

Field Relations for the components are listed in Appendix 4A (6). Tenor Relations for the components are listed in Appendix 4B (6).

Figure A3.26: STC Page Design

Figure A3.27: STC Page Wireframe



Organising Schemes

An Exact Chronological organising scheme is depicted in Figure A3.28 to organise news items on the homepage. The Help and Support page in Figure A3.29 is organised using a 'by user type' scheme, that is, individual versus business versus internal STC users (C) which represents an Ambiguous Audience Specific scheme, where the given topic selection (B) is organised as an Ambiguous Topical scheme. Each topic causes a drop down list to be displayed that is itself is organised as an (A) Exact Alphabetical scheme and the combination of (B) and (C) result in Hybrids scheme (D). In Figure A3.30 shows a dialogue involves in transferring points to a beneficiary. The dialogue itself exhibits an Ambiguous Task-Oriented scheme.

Figure A3.28: STC Organising Scheme (1)

Figure A3.29: STC Organising Scheme (2)

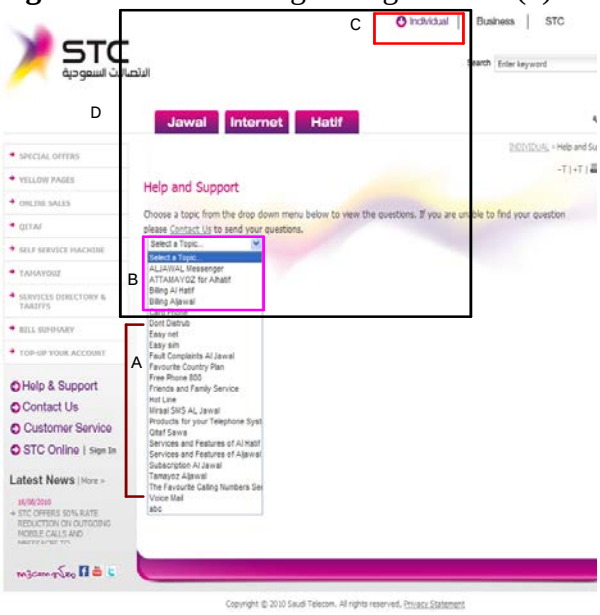


Figure A3.30: STC Organising Scheme (3)

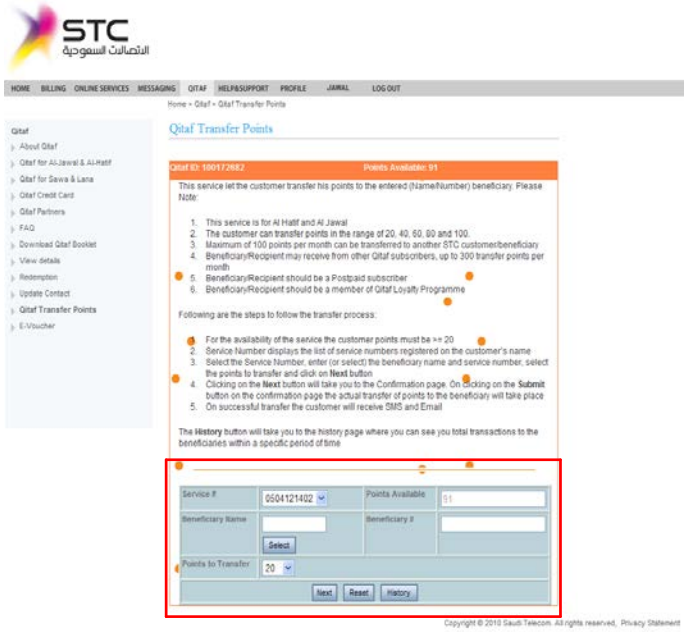


Image Analysis

In Figure A3.26 (A), this image represents a visual offer realised by the absence of a gaze at the viewer. Also, this image is viewed from a low angle so the viewer has less power over it and from a frontal angle which includes the level of involvement. Moreover, the social distance is presented here in a medium shot as it represents the business aspects of STC. The modality here is unreal.

Image-Text Analysis

The image-text analysis is depicted in Figure A3.31 and clarified in Table A3.7.

Figure A3.31: STC Image-Text analysis for Components (A...D)

(A)

(B)

(C)

(D)

Table A3.7: Text-image Relations- STC

	Image	Text	Relationship
A	Man smiling & looking to a building surrounded by sofa	"Easier life"	Divergence
B	Four men	"Real internet with a speed of……"	Divergence
C	Components building the top and the base of the mobile phone	"Create Your Package your way"	Enhancement
D	iPhone	"iPhone 4 Coming soon. Register Now"	Augmentation

A3.3.2 Atheer

Atheer was established in 2003 and is one of the leading Internet Service Providers in the Kingdom of Saudi Arabia.

Page Design

The page design depicted in Figure A3.32 consists of a primary image that is connected to text located at the far right section of the bottom of the page. The primary image (A and B) comprises two pictures, a virtual man and speedometer. At the left side of the page, there are texts and images that are related to customer support, log in, and search function. There are also some texts blocks in the middle and at the bottom of the page related to news, offers, services and products.

Page Wireframe and Components

The page wireframe depicted in Figure A3.33 consists of a site visit date, a logo, a site search facility and local navigation system located at the top of the page. In addition, it contains billboard images representing functions for posting advertisements to attract customers and a primary navigation system, also located at the top of the page. In the middle of the page are three section headers which provide access to news, the most downloaded products and the most desired games. A footer is located at the bottom of the page. On the left hand side of the page, four modules for access to account sign in, translation of the Holy Quran, portal search and customer care contact are evident.

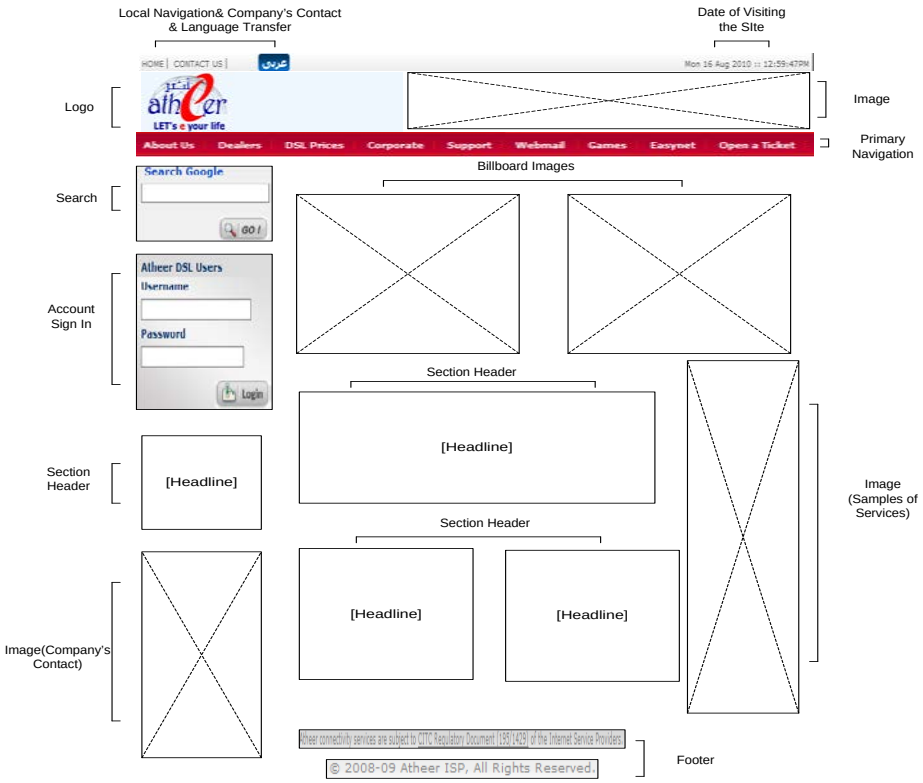
Compositional Semantics

Vertical Axis

In Figure A3.32, the vertical axis is considered strong because it begins at the top (first sector) of the page with an image (A) that is considered the most salient on the page and comprises two pictures. The first picture in the image (A) (virtual man) and the second picture (B) (watch) reflect Altheer's promise regarding the simplicity of getting the Internet which represents the ideal position of the company towards its customers. The picture (virtual men) (A) reflects the most heavily weighted on the page because of its location at the top left hand side of the image. The colour used in the picture on the left hand side of the image (A) ranges from a lighter blue to darker blue at the bottom of the image (numbers). The hue of this colour reflects the vector that relates to the text at the bottom of the page (second sector). Also, the red line that points to the clock in the picture on the left hand side of the image is considered as a vector. A (wide) line or frame separates the two page sectors (image and text). Five vectors lead to information (text) on the company, the hue of the colour of the picture at the left hand side of the image (A), the number on the on the left hand side of the image (A), the red line that points to the clock (B) on the left hand side in the image, the frame (wide line) that separates the two images (A and B) from the text, and the shoes in the picture on the left hand side of the image (on the virtual man). The reading path vertically, is regular beginning with the picture on the left (virtual man) of image (A) moving then to the clock (B), to the frame, then to the text and on to any other areas of the page. The picture on the right (clock) (B) is considered less heavily weighted than the picture (A) on the left even though they are located in the same image at the top of the page in the top, because left side of the image is heavier than the right side.

Figure A3.32: Atheer Page Design

Figure A3.33: Altheer Page Wireframe



Horizontal Axis

In Figure A3.32, image (C) (CBU next to the text) is considered to be more salient and more valued because of its placement on the right side of the page. Also, image (D) positioned on the left hand side of the page is considered less salient and less valued. The text in the middle of the page, which is considered in this case the balancing centre of the page from the horizontal view acts as a kind of vector to guide the viewer to other images (located on the left and right) at the bottom of the page. Also, the finger on the left hand side of image (D) is a vector toward the (CPU) located on the right hand side of image (C). The reading path horizontally, is a circular reading path moving from the image of the finger (D) on the left hand side of the page to the (CPU) (C) to the text (balancing centre) and on other areads of the page.

Home Page-Banner Image Analysis (A)

In Figure A3.32, the picture to the left of the image (virtual man) reflects the most heavily weighted on the page because of its position at the top left hand side of the image. Going from here (virtual man) to the picture of the clock to the right of the image is moving from the less salient and less ideal to more salient and more ideal aspects of the image (A). Moreover, the sharp (wide) line frame between the two pictures in image (A) represents the balancing centre of the image. The hat and the three numbers (333) at the edge of the picture of the virtual man are considered as vectors pointing toward the second picture (clock). The reading path in this case is regular. It moves from the picture on the left (virtual man) to the second picture (clock) and on to other areas of the page.

Field and Tenor Relations

Field Relations for the components are listed in Appendix 4A (7). Tenor Relations for the components are listed in Appendix 4B (7).

Organising Scheme

The Altheer Support Centre Ticket tracking system dialogue is arranged as an Ambiguous Task-Oriented Organising Scheme (see Figure A3.34 below).

Image Analysis

In Figure A3.32, image (A) represents a visual demand realised by a gaze at the viewer. Also, this image is seen from a low angle so the viewer has less power over it and from an oblique angle which excludes the level of involvement. Moreover, the social distance is presented here in a medium shot as it represents the business aspects of the company. The modality here is unreal.

Image-Text Analysis

The image-text analysis shown in Figure A3.35 and is clarified in Table A3.8.

Figure A3.34: Altheer Organising Scheme

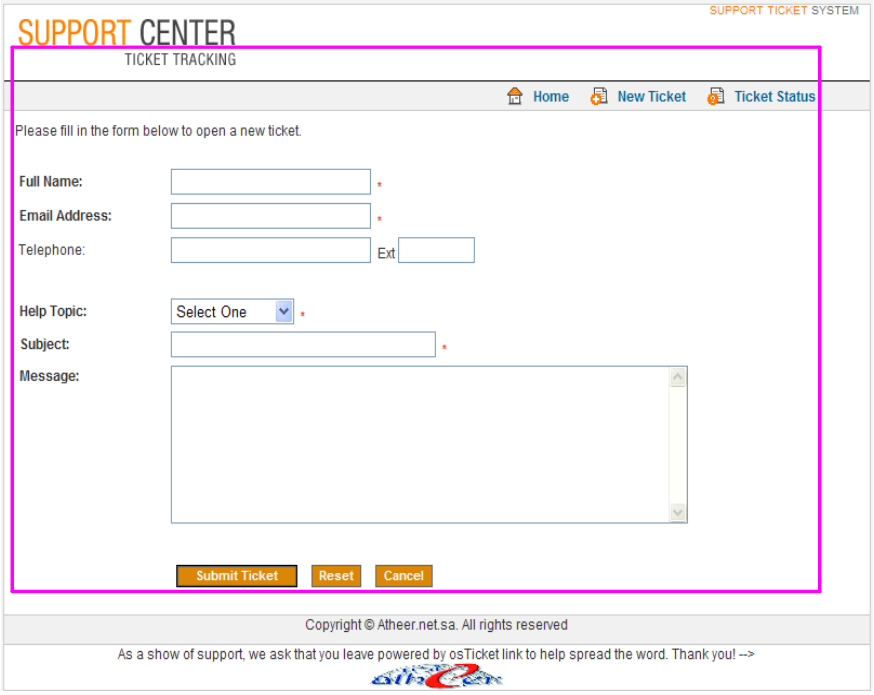


Figure A3.35: Altheer Image-Text analysis for Components (A...D)

(A)	(B)	(C)	(D)
			

Table A3.8: Text-image Relations- Altheer

	Image	Text	Relationship
A	Sport man	"Easy Net"	Enhancement
B	Speed count	"…full speed ……"	Enhancement
C	CBU picture	"Virtual hosting….WEB HOSTING..."	Augmentation
D	Sign for Customer Support	"Customer Support call 920020000"	Augmentation

A3.3.3 Nesma

Nesba has been playing a pivotal role in developing industry and technology in the Kingdom of Saudi Arabia for more than twenty years. Nesma Internet is considered one of the largest ISP's in Saudi Arabia. It was established in 1996 and has more than 500 employees.

Page Design

The page design depicted in Figure A3.36 consists of a primary image (A) that is connected to text in the far right top hand side relating to an advertisement for "dsl service". The primary image consisting of family members doing different activities is visible at the top of the page. At the left hand side of the page there are texts which are related to "customer log in" and "information about the company". Also detected are texts in the middle and bottom of the page which are related to news, offers, services and products.

Page Wireframe and Components

The page wireframe in Figure A3.37 contains a primary navigation system, a logo, and site search facility at the top of the page. Additionally, a billboard image is visible at the top of the page, encouraging visitors to the site to look for products that suit the family. Next to the billboard image is an advertisement encouraging users to subscribe to a new "dsl" service. At the bottom of the page a footer and company contact are evident. Above the footer is two section headers. On the left hand side of the page is a local navigation system and a column panel which provides access to account subscription.

Compositional Semantics

Vertical Axis

In Figure A3.36, the vertical axis is considered because it doesn't begin at the top (first sector) of the page. Image (A) is considered the most salient and reflects the promise aspects of the company related to the simplicity and seamlessness of getting Internet services which demonstrates the ideal position of the company towards its customers. This image is considered to reflect the most heavily weighted on the page. The colour used in the image in the middle of the page ranges from dark blue to a lighter shade of blue at the bottom of the image. The hue of the colour reflects the vector that relates to the text at the bottom (second sector) of the page. A line or frame separates the two sectors (image and text). Four vectors lead to information (text) on the company, the hue of the colour used in image (A), the frame that separates the image from the text, the hand of the woman in image (A) and the use of the same colour in the background of image (A) in the first sector, is used again in the text at the bottom (second sector) of the page as a background. The reading path vertically, is regular beginning with image (A) then moving to the frame, then on to other areas on the page. The image located in the middle of the page is considered less heavily weighted than image (A) located at the top of the page, however, is more heavily weighted than the contents of the bottom of the page.

Figure A3.36: Nesma Page Design

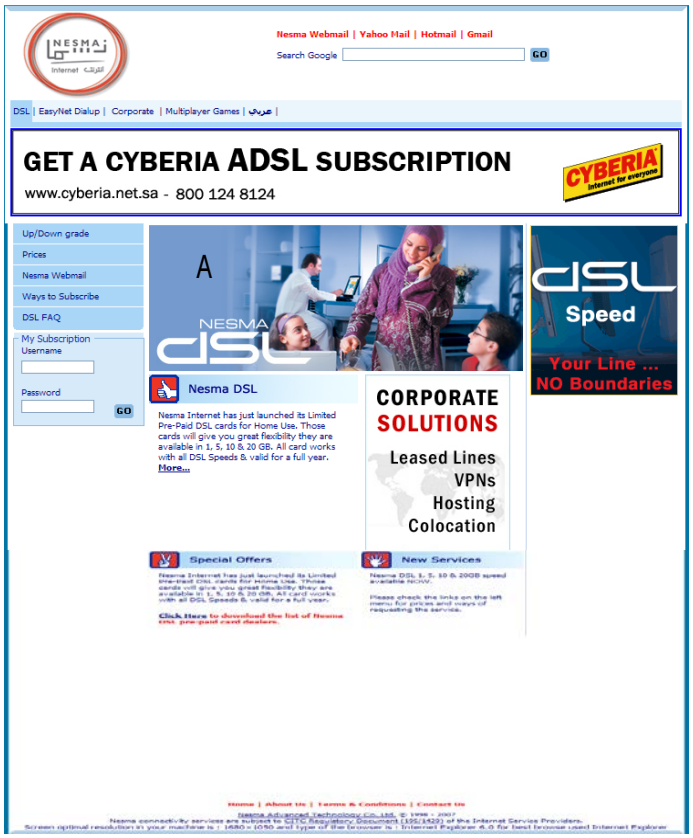
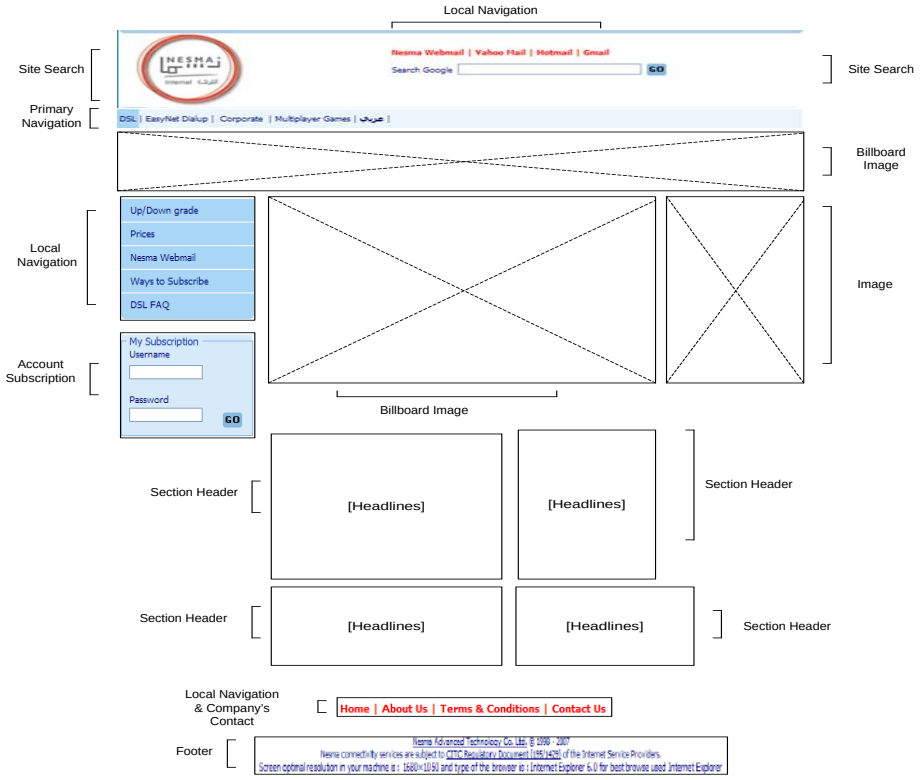


Figure A3.37: Nesma Page Wireframe



Horizontal Axis

In Figure A3.36, in the region to the right of the page, is an image (DSL Speed) located next to image (A) which is considered to be more salient and more valued. Images and text are considered less salient to more salient and real to ideal moving from left to right of a page. The primary image (A) (Family) in the middle of the page, which is considered in this case the balancing centre of this site from the horizontal view acts as a kind of vector to guide the viewer to the bottom of the page. The reading path horizontally which is a circular reading path starting from the image on the left hand side of the page, that is, from the primary image (A) to the image (DSL Speed), back to the primary image (A), then on to other areas of the page.

Field and Tenor Relations

Field Relations for the components are listed in Appendix 4A (8). Tenor Relations for the components are listed in Appendix 4B (8).

Organising Scheme

In figure A3.38, not surprisingly, the Request a Quotation dialogue represents a hybrid organising scheme (C) consisting of two ambiguous schemes, Ambiguous Audience-specific scheme related to Internet services: consumer versus corporate (A), and an Ambiguous Task-Oriented scheme for the quotation function(B).

Figure A3.38: Nesma Organising Scheme

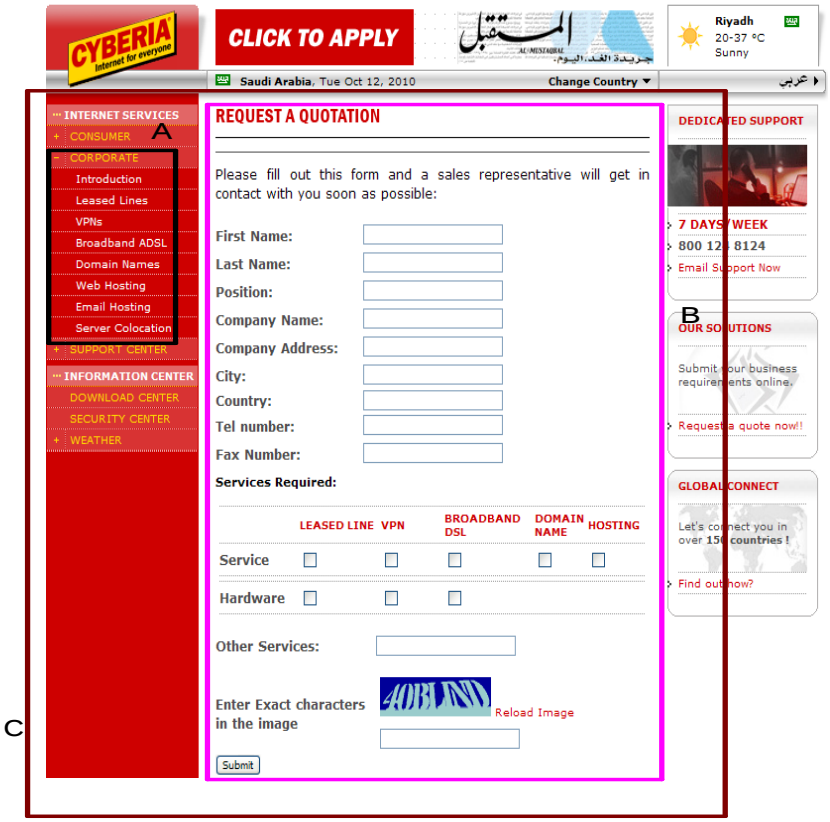


Image Analysis

In Figure A3.36, image (A) represents a visual offer, realised by the absence of a gaze at the viewer. This image is seen from a low angle so the viewer has less power over it and from a frontal angle which includes the level of involvement. Moreover, the social distance is presented here in a close shot as it represents the family aspects of the site. The modality here is real.

Image-Text Analysis

The image-text analysis is shown in Figure A3.39 and clarified in Table A3.9.

Figure A3.39: Nesma Image-Text analysis for Component (A)

Table A3.9: Text-image Relations - Nesam

	Image	Text	Relationship
A	Family members doing several activities	"NESMA dSL"	divergence

A3.3.4 AwalNet

AwalNet is one of the largest Internet providers in Saudi Arabia. It has developed a great deal of expertise in managing Internet services and offers a wide variety of Internet products designed to meet the needs of different types of businesses. AwalNet was established in 1998 and has 280 employees.

Page Design

The page design in Figure A3.40 consists of a primary image (A) which is posted in the top of the website which represents the company's mission "Always the First". In the middle of the page there are three images (B, C and D) connected to a text block adjacent to image (D) which is related to AwalNet's services (corporate, medium and small). There are also several images at the bottom of the page presented in a one line section header which represents AwalNet's partners. At the far bottom right of the page, there is a text block which represents AwalNet news.

Page Wireframe and Components

The page wireframe in Figure A3.41 contains a primary navigation system, a logo, site search facility and s billboard image at the top of the page. In the middle of the page there are three column panel headers with images which facilitate access to company's products and services. Next to these headers, there is another column panel header that provides access to the news section. There is a footer at the bottom of the page. Above the footer, are several images which lead to information on the company's business activities.

Compositional Semantics

Vertical Axis

In Figure A3.40, the vertical axis is considered strong because it begins at the top (first sector) of the page with an image (A) that is considered the most salient on the page. The left side of the image (A) (two wide red lines) is considered more heavy and valued because of its prominent position at the top of the page. The whole image reflects the company's promise regarding the quality of the Internet services offering which represents the ideal position of the company towards satisfying the needs of its customers. The shade of the colour on image (A) ranges from dark red on the left side to a lighter colour on the right. The hue of this colour and the (number 1) sign reflect the vectors that relate to the text at the bottom (second sector) of the page. A sharp line or frame separates the two sectors (image and text). Four vectors lead to information (text) on the company, the hue of the colour used on the left hand side of image (A), the frame (line) that separates the top image (A) from the text, the (number 1) sign and the use of the same colour on the background of image (A) is used again in the text at the bottom (second sector) of the page in the word 'More'. The reading path vertically, is circular beginning with the image (A) (two wide red lines), moving to the text "Always The First", to the number 1, then to the two wide red lines and on to other areas of the page. The image (A) at the top of the page is considered more heavily weighted than the three images (B, C and D) at the bottom (second sector) of the page. Of the three images at the bottom of the page, image (B) (a ball on a hand on it) on the far left hand side of the page, is considered more heavily weighted than the other two images (C and D).

Horizontal Axis

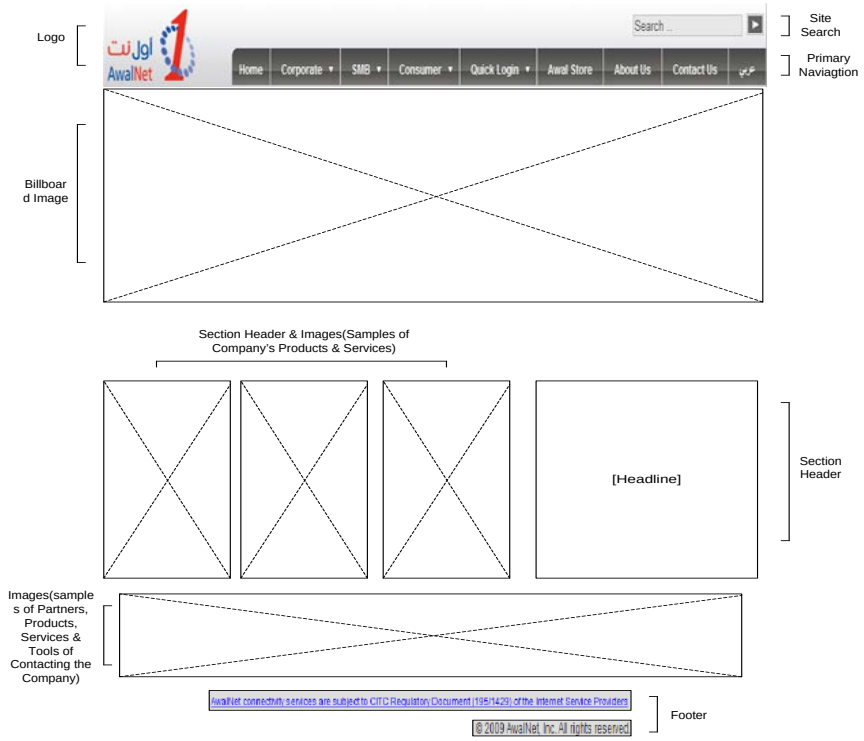
In Figure A3.40, the three images adjacent to each other (B) (ball), (C) (man) and (D) (man with laptop) are considered less salient to more salient and real to ideal moving from left to right. The text (news) on the right side of the page is considered in this case the most real on the page. The images (C) and (D) (Small and Medium Business) and (Consumer Service) are considered in this case the balancing centre of the page from the horizontal view. This image (D) (the finger sign on it) will play as a kind of vector to guide to the right verbal text (news). From that, we can figure the reading path horizontally which is a regular reading path from the left image (B) to the images (balancing centre) to the right text (Latest News) then to any other part in the site.

Field and Tenor Relations

Field Relations for the components are listed in Appendix 4A (9). Tenor Relations for the components are listed in Appendix 4B (9)

Figure A3.40: AwalNet Page Design

Figure A3.41: AwalNet Page Wireframe



Organising Schemes

The navigation options depicted in Figure A3.42 are noted as Ambiguous Task-Oriented Organising Schemes. The latest news is organised using an Exact Chronological scheme (see Figure A3.43).

Figure A3.42: Organising Scheme (1)

Figure A3.43: Organising Scheme (2)

Image Analysis

In Figure A3.40, image (A) represents a visual demand because it is realised by a gaze at the viewer. This image is seen from a low angle so the viewer has less power over it and from a frontal angle which includes the level of involvement. Moreover, the social distance is presented here in a medium shot as it represents the business aspects. The modality here is real.

Image-Text Analysis

The image-text analysis is shown in Figure A3.44 and clarified in Table A3.10.

Table A3.10: Text-image Relations- AwalNet

	Image	Text	Relationship
A	Number 1 sign	"Always The First"	Exemplification
B	Hand holding a ball	"Corporate & Enterprise… Integrated solutions…"	Divergence
C	Man using mobile phone	"Small & Medium… Integrated solutions…"	Divergence
D	A man sitting at a computer desk	"Consumer Service….Services..."	Augmentation

Figure A3.44: AwalNet Image-Text analysis for Components (A...D)

(A)	(B)	(C)	(D)
			

A3.3.5 Naseej

Naseej is a provider of integrated systems, solutions and services to support the considerable developments witnessed in the region utilizing Information Technology. Naseej was launched in 1997 as the first Arab information network that provides Internet services to Saudi users (Naseej Internet Services). The company's solutions are designed to respond to the needs and requirements of government and private organizations for advanced effective IT Systems and Solutions. Also, in 1997 Naseej launched the first Arabic Portal *www.Naseej.com*. Since its launch, Naseej pioneered developing a number of solutions for the Arabic audience; in 1998 the first Arabic email service, and 1999 the first Arabic personalization service "MyNaseej". In 2000, it launched the first Arabic Messenger, in addition to many other pioneering services and solutions. Naseej has more than 200 employees.

Page Design

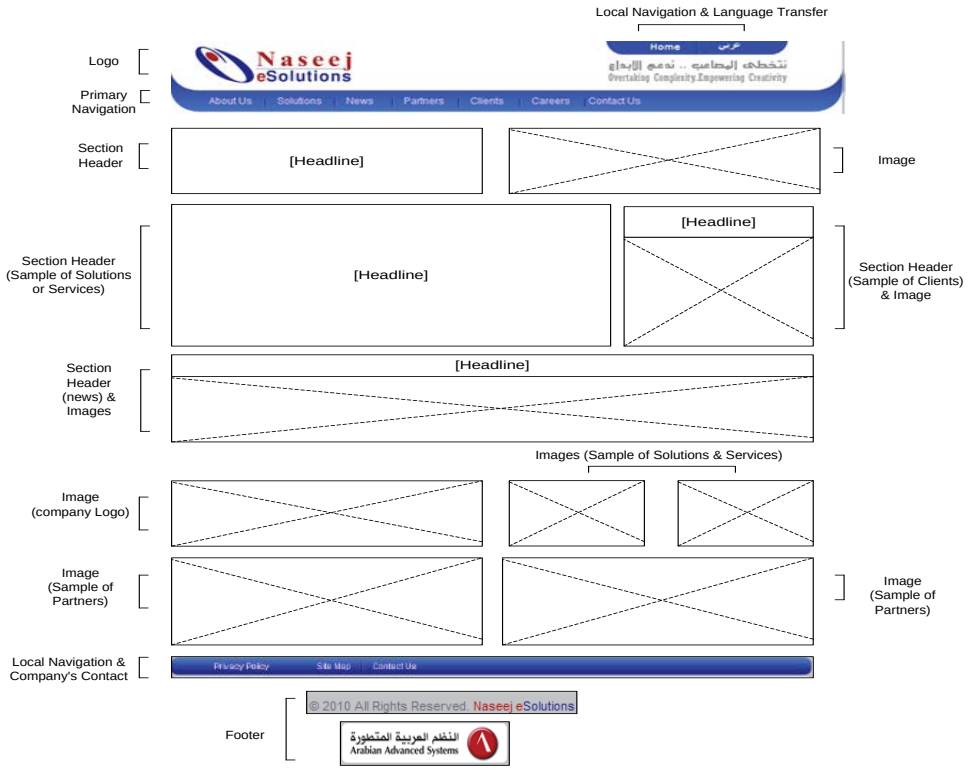
The page design in Figure A3.45 consists of a primary image which is positioned to the top right hand side of the page which represents a sample of the company's client "Ministry of Defence" with a sample of solutions adjacent to the image. In the middle of the page there are two images connected to texts related to Naseej news. There are several images at the bottom of the page which are related to the company's services and partners.

Page Wireframe and Components

The page wireframe in Figure A3.46 consists of a navigation system, a logo, and language translator located at the top of the page. It also contains at the top of the page, a section header and image which facilitate access to the company's clients and solutions. In the middle bottom right of the page is a section header which represents a module to access company's services, library and knowledge solutions. Above this section header is another section header which provides access to company news. At the bottom of the page there is a footer. Above the footer, several images representing Naseej partners, logo, and services are evident.

Figure A3.45: Naseej Page Design

Figure A3.46: Naseej Page Wireframe



Compositional Semantics

Vertical Axis

In Figure A3.45, the vertical axis is considered weak because it doesn't begin at the top (first sector) of the page with an image. The benefit of having an image in the first sector of the page is to reflect the promise aspects of the services offered by the company which represent the ideal position of the company towards its customers. The shade of the colour in the image (A) at the top sector of the page ranges from lighter at the top of the image to darker at the bottom. The hue of this colour reflects the vector that relates to the bottom (second sector) of the page. A wide line or frame "Our News" separates the two sectors (top & bottom) of the page. Three vectors lead to information on the company, the hue of the colour used in the top sector of the page, the frame (wide line) that separates the top sector from the bottom sector, the use of the same colour of the background of the first sector at the top of the page is used again in the second sector as a background colour in images (B, C, D and E) at the bottom of the page. The reading path vertically, is regular beginning with the first sector at the top of the page, moving then to the wide frame, then to the images (B, C, D and E) at the bottom of the page to other areas of the page. The link "our news" in the middle of the page is considered less heavily weighted than the image at the top of the page, but is more heavily weighted than the other images at the bottom of the page.

Horizontal Axis

In Figure A3.45, image (E) (Naseej services) on the right hand side of the page is considered more salient and more valued. Also, images (B, C and D) are considered less salient to more salient and real to ideal moving from left to right. The text "Our News" in the middle of the page adjacent to image (B) which is considered in this case the balancing centre of this site

from the horizontal view acts as a kind of vector image (B) to guide the viewer to images (D and E) located at the bottom of the page. The reading path horizontally is a regular reading path moving from image (B) to the text (balancing centre), to the other images on the page, then on to other areas of the page.

Field and Tenor Relations

Field Relations for the components are listed in Appendix 4A (10). Tenor Relations for the components are listed in Appendix 4B (10).

Organising Scheme

In Figure A3.47, the organising scheme between the mobile services image and content services images on the homepage is deemed to be Ambiguous Topical.

Image Analysis

In Figure A3.45, image (D) represents a visual offer realised by the absence of a gaze at the viewer. This image is viewed from a low angle so the viewer has less power over it and from a frontal angle which includes the level of involvement. Moreover, the social distance is presented here in a medium shot as it represents the business aspects of Najeel. The modality here is real except for the books which are only just visible.

Figure A3.47: Naseej Organising Scheme

Image-Text Analysis

The image-text analysis is shown in Figure A3.48 and clarified in Table A3.11.

Figure A3.48: Naseej Image-Text analysis for Components (A...E)

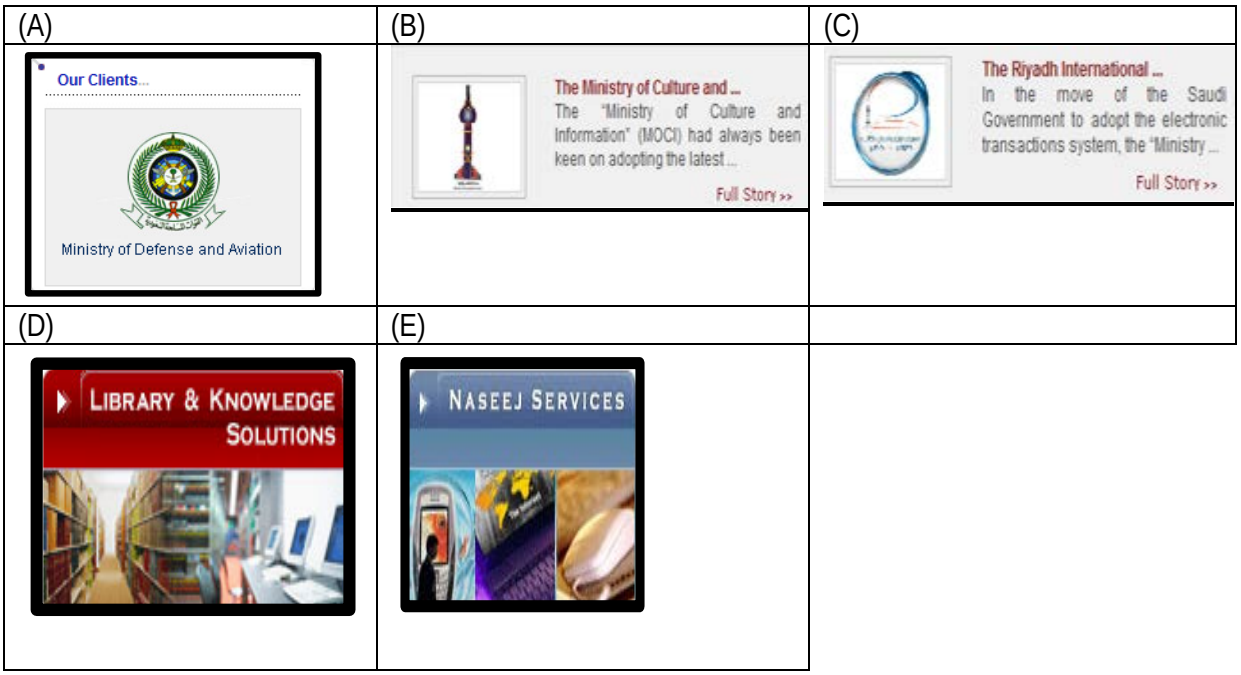


Table A3.11: Text-image Relations- Naseej

	Image	Text	Relationship
A	Logo	"Our Clients..Ministry of Defense and Aviation"	Exposition
B	The Ministry tower	"The Ministry…"	Augmentation
C	Logo	"The Riyadh…In the move…"	Augmentation
D	Library	"LIBRARY & Knowledge Solution."	Augmentation
E	Samples of services	"NASEEJ SERVICES"	Exemplification

A3.4 Food

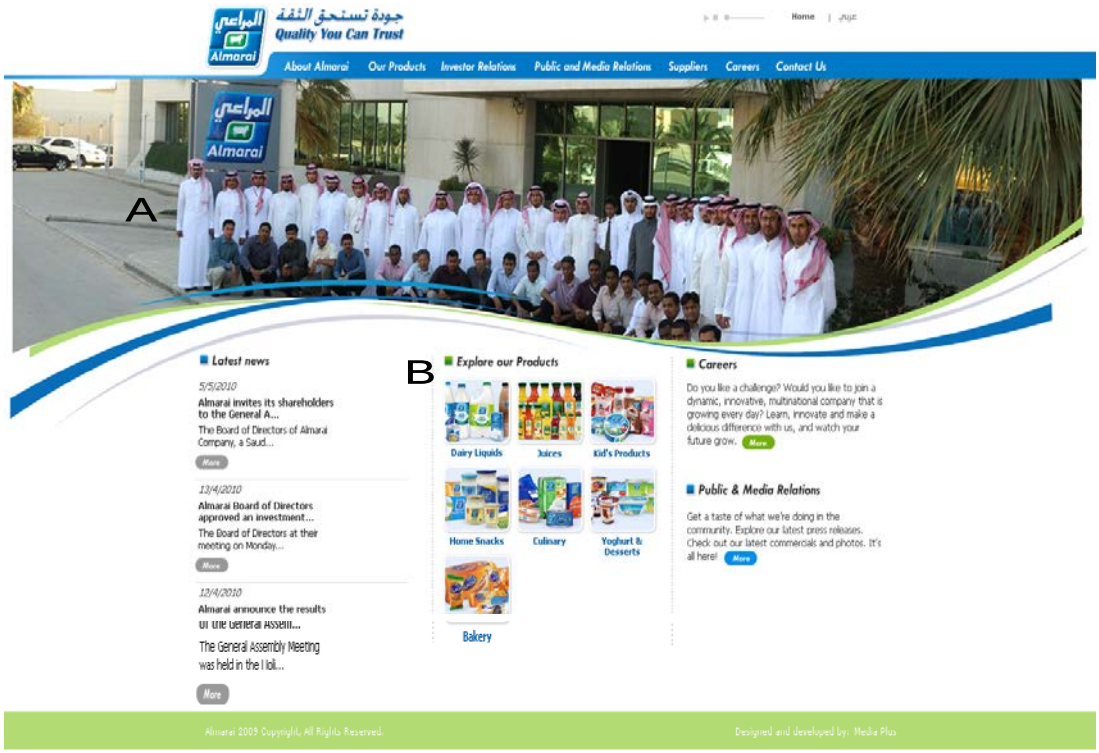
A3.4.1 Almarai

Almarai specialises in agricultural production as well as food processing and distribution. Almarai is engaged predominantly in producing and marketing dairy products and fresh juices throughout the Kingdom and other GCC countries. Almarai is considered the largest dairy products exporter in Saudi Arabia.Almaria was established in 1976, has 4,000 employees and a paid-up capital of 1,150,000,000 SAR.

Page Design

The page design depicted in Figure A3.49 consists of a primary image located at the top of the page which comprises pictures of employees representing different nationalities. In the middle of the page is a one column panel of images connected to text related to Amarai's products. Located around the images are several texts related to news, careers and media.

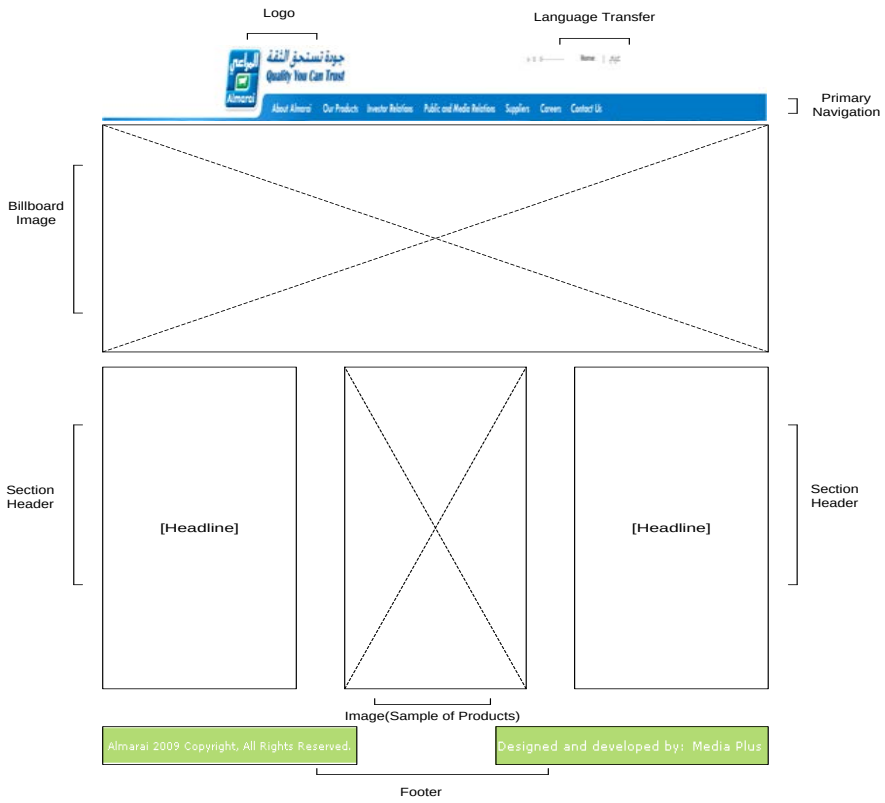
Figure A3.49: Almarai Page Design



Page Wireframe and Components

The page wireframe in Figure A3.50 consists of a language translator, a logo, and a primary navigation system and billboard image at the top of the page. In the middle of the page, there are three column panel headers with a number of images which lead to information on Alamrai and its products. The bottom of the page contains a footer.

Figure A3.50: Almarai Page Wireframe



Compositional Semantics

Vertical Axis

In Figure A3.49, the vertical axis is considered very strong because it begins at the top (first sector) of the page with an image (A). This image represents the promise aspects of Amarai which constitutes the ideal position of the company towards its customers, represented in the good working environment at Amarai. This image represents the most salient on the page and image (B) situated under the title “Explore” at the bottom of the page is considered here as less salient. Image (A), is considered the most heavily weighted because of its prominent position in the centre at the top of the page. A sharp straight line (blue) in the top of image (A) is considered here as a frame that repeats itself in a different shape at the bottom of the image. These two different shaped lines or frames separate the image from the text sector on the page. The bottom frame separates the two page sectors (top and bottom).The reading path is circular, starts with image (A), moving to image (B), then back again to image (A). From here the reading path moves the other areas of the page. Four vectors lead to information (text) on the company, the repeating of the colour (blue) used in image (A), the frame (line) that separates image (A) from the text, the picture at the bottom of image (A) (cut head) and the same colour (blue) in image (A) is used again in image (B) at the bottom of the page.

Horizontal Axis

In Figure A3.49, in the middle of the page, image (B) under the title “Explore” represents the most salient image on the page and is considered the balancing centre. The text on the left

and right hand sides around the image (B) in the middle of the page are considered here as vectors to concentrate the viewer on image (B) in the middle of the page. The reading path horizontally, is considered to be a circular reading path, beginning at the balancing centre with image (B), moving to the text on the left hand side of the page, then to the text on the right hand side, back to image (B) and on to other areas of the page.

Field and Tenor Relations

Field Relations for the components are listed in Appendix 4A (11). Tenor Relations for the components are listed in Appendix 4B (11).

Organising Schemes

As can be seen in Figure A3.51, the latest news items on the Almarai homepage are organised using an Exact Chronological scheme (A). The Product Exploration area of the homepage is organised around combinations of single labels and images that are each organised using Ambiguous Audience-specific organisation schemes (C). In the same image an Ambiguous Topical organising scheme (B) is seen. The combination of image (B) and (C) can be thought of as constituting a Hybrid organising scheme (D).

Figure A3.51: Almarai Organising Schemes

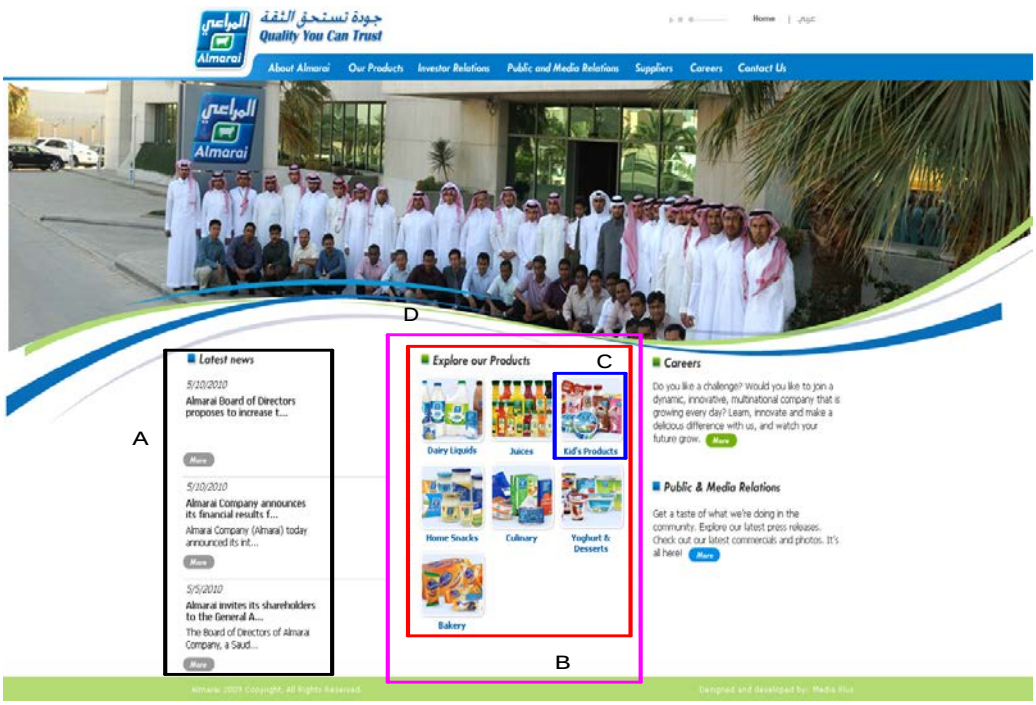


Image Analysis

In Figure A3.49, image (A) represents a visual demand realised by a gaze at the viewer. Also, this image is seen from a high angle so the viewer has more power over it and from a frontal angle which includes the level of involvement. Moreover, the social distance is presented here in a medium shot representing the business aspects of Almarai. The modality here is real.

Image-Text Analysis

The image-text analysis is shown in Figure A3.52 and clarified in Table A3.12.

Figure A3.52: Almarai Image-Text analysis for components (A and B)

(A)	(B)
	

Table A3.12: Text-image Relations- Almarai

	Image	Text	Relationship
A	Staff	No Text	N/A
B	Different kinds of products	"Explore our Products…"	Exemplification

A3.4.2 Nadec

Nadec was incorporated in 1981 and is the first and largest agricultural share-stock company in the Kingdom of Saudi Arabia. The company is involved in the production of agricultural products (vegetable and animal), rehabilitation of agricultural lands and processing, canning, storing and marketing of agricultural products. Nadec has investments in a number of national companies amounting to SR 42.6 million. Nadec is specialised in the areas of agricultural production as well as food processing and distribution. The company consists of dairy factories and cattle farms, six of which specialize in milk production and calf fattening [50,000 heads], two modern dairy plants with a total capacity reaching one million litres a day of fresh milk, and a date processing plant with total production capacity of 5,000 tons/year from the best varieties of Saudi dates. Nadec has 4,600 employees and a Paid-Up Capital of 600,000,000 SAR.

Page Design

The page design depicted in Figure A3.53 consists of a primary image positioned at the top of the page that reflects the company's mission. In the middle of the page on the left hand side, there is a video detailing Nadec's operations, text that represents "news", and four images and associated texts representing Nadec's products, investor relations, projects and employment services. At the bottom of the page, there are several texts in one block which represent company information and contact.

Page Wireframe and Components

The page wireframe depicted in Figure A3.54 consists of a logo, site search facility, billboard image and primary navigation system at the top of the page. In the middle of the page, there is a video on the company background and four images which provide access to the company's future plans and promotions. At the bottom of the page, there is a section header which facilitates access to discover more detailed information about the company. A footer exists on this page.

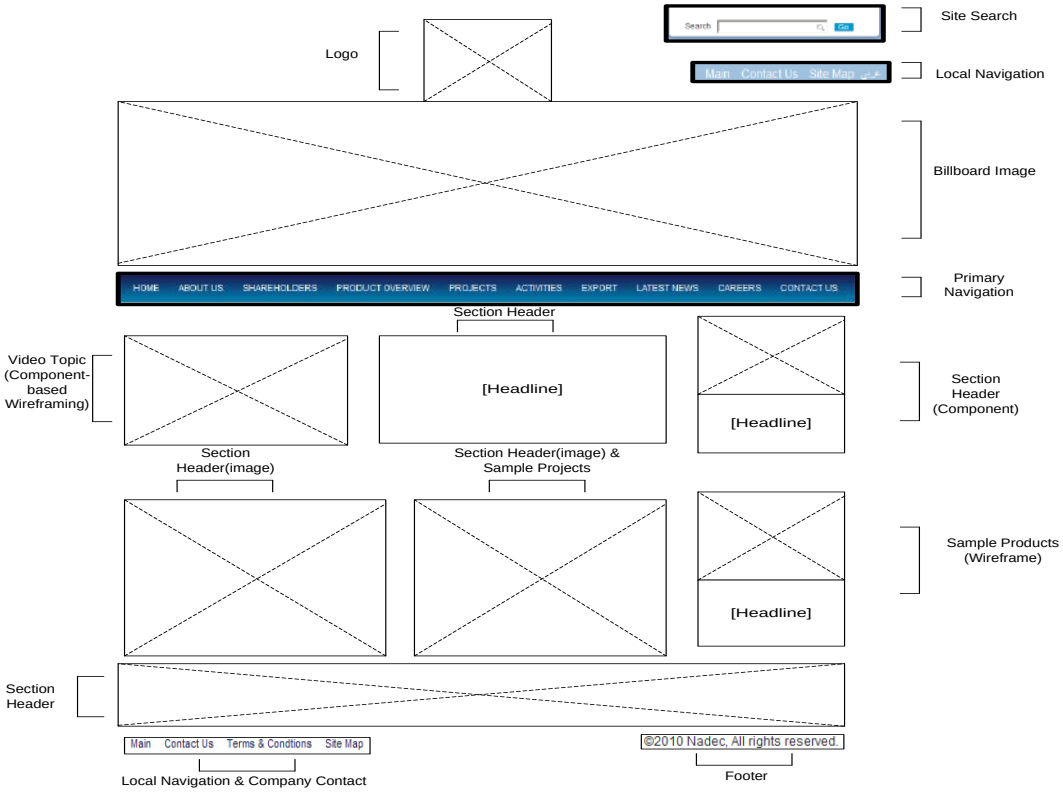
Compositional Semantics

Vertical Axis

In Figure A3.53, the vertical axis is considered strong because it begins at the top (first sector) with an image (A) comprised of two pictures that is considered the most salient on the page. The first picture in the image (Logo) and the second (Hands) reflect the promise aspects of Nadec, regarding the quality of products which demonstrates the ideal position of the company towards its customers. The picture of the hand in image (A) represents the most heavily weighted on the page because of its prominent position on the left hand side at the top of the page. The shade of the colour on image (A) varies is from deep blue to lighter blue at the bottom of the image. The hue of this colour reflects the vector that relates to the text at the bottom (second sector) of the page. A sharp (wide) line or frame separates the two sectors (image and text) of the page. Four vectors lead to information (text) on the company, the hue of the colour used in image (A), the frame (wide line) that separates image (A) from the text, the left picture of the hands in image (A) and reuse of the same colour in the background of image A in the text (second sector) and as a background colour in image (D) (corn-tree) in the bottom of the page. The reading path vertically is circular, beginning with the picture of the hands in image (A), moving to video, to the picture of the corn-tree in image (D), to the picture of the shaking hands on the right side of image (B), then on to other areas of the page. The picture in the middle of the page representing the video (movie clip) is considered less heavily weighted than image (A) at the top of the page, but is more heavily weighted than the images at the bottom of the page.

Figure A3.53: Nadec Page Design

Figure A3.54: Nadec Page Wireframe



Horizontal Axis

In Figure A3.53, the picture to the right of image (B) (shaking hands) is considered the most salient and most valued. The other images on the page are considered less salient to more salient and real to ideal moving from left to right. The text “latest news” in the middle of the page, which is considered in this case the balancing centre of the page from the horizontal view acts as a kind of vector to guide the viewer to image (D) (corn) at the bottom of the page because it comprises the same gold colour. The reading path horizontally which is a circular reading path, moving image (C) on the left hand side of the page to image (D), to image (E) to the video clip image, to the text “latest news” and on to other areas of the page.

Home Page-Banner Image Analysis (A)

In Figure A3.53, the picture of the hands on the left hand side of image (A) reflects the most heavily weighted on the page because of its prominent location in the top left hand side of the image. Going from the picture of the hands on the left hand side of image (A) to the picture (logo) on the right is moving from less salient and less ideal to more salient and more ideal. The slight line frame separates the two pictures in image (A). The picture (logo) positioned on the right hand side of image (A) which includes the balancing centre of the image, the two leaves, the beginning of the right hand, the fifth finger of the right hand, the white colour of the “Everyday” sign in the picture of the hand in image(A)are considered vectors toward the second picture (logo). The reading path in this case is circular, moving from the left picture (hand) to the second picture in the same image (A) to image (C), and on to other areas of the page.

Field and Tenor Relations

Field Relations for the components are listed in Appendix 4A (12). Tenor Relations for the components are listed in Appendix 4B (12).

Organising Schemes

In Figure A3.55 (A) there is a video component with a key frame of a video loaded and ready for a user to play if required. The video component uses an Ambiguous Metaphor-driven organising scheme. In Figure A3.55 (B), another instance of an Exact Chronological scheme used to organise news items is detected.

Image Analysis

In Figure A3.56, image (A) represents a visual offer realised by the absence of a gaze at the viewer. Also, this image is seen from a low angle so the viewer has less power over it and from a frontal angle which includes the level of involvement. Moreover, the social distance is presented here in a medium shot as it represents the business aspects of Nadec. The modality here is considered real.

Image-text Analysis

The image-text analysis is shown in Figure A3.56 and clarified in Table A3.13.

Figure A3.55: Nadec Organising Schemes

Figure A3.56: Nadec Image-Text analysis for Components (A...E)

(A)	(B)	(C)
		
(D)	(E)	
		

Table A3.13: Text-image Relations- Nadec

	Image	Text	Relationship
A	two leaves & the sand with the hand	No Text	Homospatiality
B	Shaking hands	"EMPLOYMENT…Endow…"	Divergence
C	Tree on the hand	"NADEC… & Investors Relations"	Divergence
D	Corn	"Agriculture Projects…Since …"	Exemplification
E	Butter Milk	"PRODUCTS…We are…"	Exemplification

A3.4.3 Sadafco

Sadafco is engaged in manufacturing and marketing of long life dairy products and other foodstuffs such as ice cream, tomato paste, juices and bottled water. Sadafco was established in 1976, has over 2,000 employees and Paid-Up Capital of 325,000,000 SAR.

Page Design

The page design in Figure A3.57 consists of a main image (A), positioned at the top of the page that represents a milk product. In the middle of the page there are three images with associated text arranged in three column panels which represent the company's products (milk, tomato paste and ice cream). At the bottom of the page are two texts in two languages (Arabic and English) which represent a competition for users to win prizes.

Page Wireframe and Components

The page wireframe depicted in Figure A3.58 consists of a logo, primary navigation scheme and billboard located at the top of the page. In the middle of the page there are three column panel headers which facilitate access to the company's products. A footer is positioned at the bottom of the page. Above the footer, there are two section headers providing access to special promotions.

Compositional Semantics

Vertical Axis

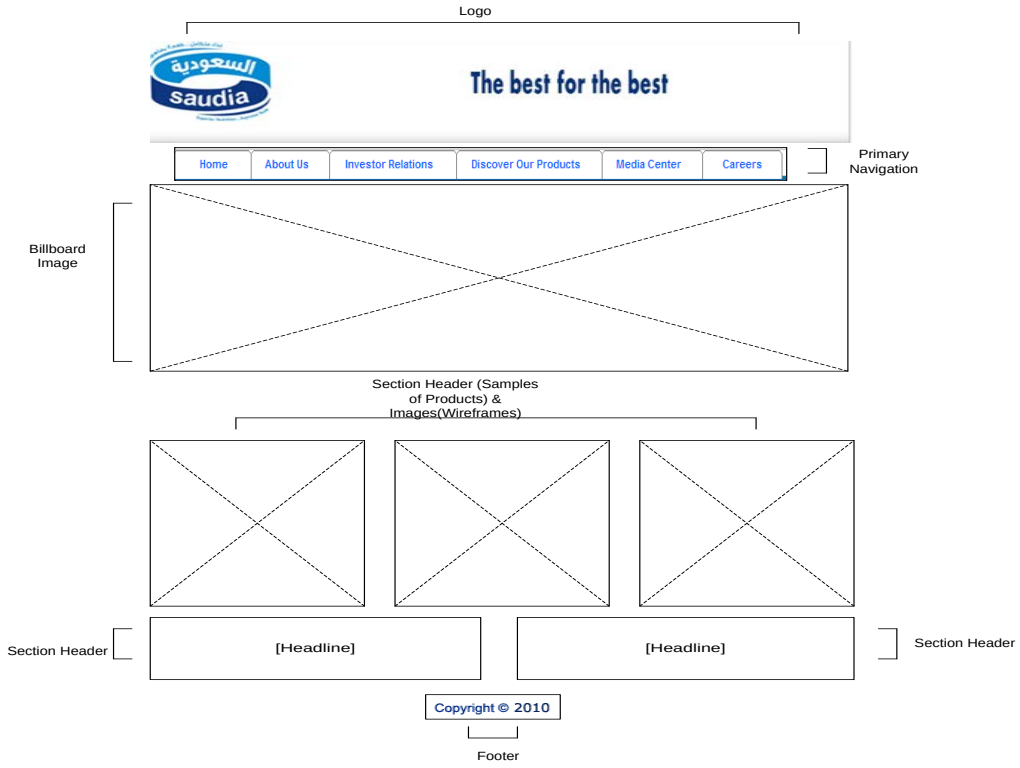
In Figure A3.57, the vertical axis is considered strong because it begins at the top (first sector) of the page with an image (A) that is considered the most salient and reflects the promise aspects of the company related to the quality of the product offering which shows the represents the position of the company towards its customers. The image reflects the most heavily weighted on the page due to its prominent position at the top of the page. The shade of the colour in this image is blended. The hue of the colour reflects the vector that relates to text which is located at the bottom (second sector) of the page. A sharp line or frame separates the two sectors (image and text). Four vectors lead to information (text) on the company, the hue of the colour used in image (A) at the top of the page, the frame (line) that separates image (A) from the text, the picture of the product in image(A) that leads to the same product at the bottom (B) of the page and the same colour of the background of image (A) is reused in the text (second sector) as a background colour in some images located at the bottom of the page. The reading path vertically, is circular starting with image (A) (milk) at the top of the page, moving to image (D) (ice cream) to image (C) (tomato sauce) to image (B) at the bottom of the page and back to A), then on to other areas of the page. The images located at the bottom of the page are considered less heavily weighted than image (A) at the top of the page.

Horizontal axis

In Figure A3.57, the picture of the milk in image (B) is less salient and less valued. The three images adjacent to each other are considered less salient to more salient and real to ideal moving from left to right. The image (C) in the middle of the page which is considered in this case the balancing centre of the page from the horizontal view acts as a kind of vector to

Figure A3.57: Sadafco Page Design

Figure A3.58: Sadafco Page Wireframe



guide the viewer to the text (repeated in the colour 'red') at the bottom of the page. From that, The reading path horizontally is determined to be a regular reading path moving from image (B) on the left to the balancing centre, image (C), image (D) on the left, then on to other areas of the page.

Field and Tenor Relations

Field Relations for the components are listed in Appendix 4A (13). Tenor Relations for the components are listed in Appendix 4B (13).

Organising Scheme

The "Discover Our Products" category depicted in Figure A3.59 utilises an Ambiguous Topical organising scheme.

Figure A3.59: Sadafco Organising Scheme

Image Analysis

In Figure A3.57, image (A) represents a visual offer realised by the absence of a gaze at the viewer. This image is viewed from a low angle so the viewer has less power over it and from a frontal angle which includes the level of involvement. Moreover, the social distance is presented here in a medium shot as it represents the business aspects of Sadafco. The modality here is considered unreal as the colour around the milk is only just visible.

Image-Text Analysis

The image-text analysis is shown in Figure A3.60 and clarified in Table A3.14.
Figure A3.60: Sadafco Image-Text analysis for Components (A...D)

(A)	(B)	(C)	(D)
			

Table A3.14: Text-image Relations- Sadafco

	Image	Text	Relationship
A	Milk	"SADAFCO"	Exemplification
B	Milk	"Saudia Milk…Five out …"	Augmentation
C	Tomato Paste	"Saudia Tomato Paste is the …"	Augmentation
D	Ice Cream	"Saudia Ice Cream…The family choice …"	Augmentation

A3.5 Transportation and Tourism

A3.5.1 Saptco

Saptco specializes in public bus transport services within and outside the Kingdom of Saudi Arabia. In addition, Saptco provides Land transport and carrier services between cities and villages in Saudi Arabia and overseas, e.g. Egypt, Syria, Jordan, Kuwait, Qatar, U.A.E, Bahrain and Turkey. Saptco's fleet consists of over 2,300 buses. Saptco owns a capital share of SR 500 thousand in Saudi Bahraini Transport Co. Saptco was incorporated in 1979, has 5,052 employees and Paid-Up Capital of 1,250,000,000 SAR.

Page Design

The page design depicted in Figure A3.61 consists of a main image (A) which is located at the top of the page which consists of "Sightseeing" to the left of the image and a coach to the right. In the middle of the page there is text which represents the company's background. At the bottom of the page, there are two images presented in two separate column panels with associated texts which represent information on the company's fleet with an example of a destinations (Egypt) and another text which represents the a timetable. On the far right of the page, a number of texts which represent the latest news are evident. On the left hand side of the page there is general information about the company presented in a single column panel.

Page Wireframe and Components

The page wireframe in Figure A3.62 consists of a logo, a billboard image and a primary navigation system located at the top of the page. In the middle of the page are two column panel headers which facilitate access to background information on Saptco and latest news. At the bottom of the page there are two column panel headers which represent modules to make bookings for the company's fleet and to reserve seats. At the left hand side of the bottom of the page is a section header which represents the local navigation system.

Compositional Semantics

Vertical Axis

In Figure A3.61, the vertical axis is considered strong because it begins at the top (first sector) of the page with an image (A) that is considered the most salient on the page. Image (A) consists of two pictures. The picture located on the left hand side of the image (buildings) and the second picture (bus) reflect Saptco's promise regarding global trends of providing services which represents the ideal position of the company towards its customers. The picture on the left the image (buildings) represents the most heavily weighted on the page

because of its prominent position at the top left hand side of the image. The hue of the colour of image (A) reflects the vector that relates to text located at the bottom (second sector) of the page. A sharp line or frame separates the two page sectors (image and text). Five vectors lead to information (text) on the company, hue of the colour used in image (A), the frame (line) that separates image (A) from the text, the picture of a street in image (A), the picture of tyres in image, (A), the repeated image of the bus in image (A) and at the bottom of the page and the use of the same colour in the background of image (A) (first sector) is reused in the text (second sector) and as a background colour in some images at the bottom of the page. The reading path vertically, is circular. Beginning with the picture in image (A) at the top of the page, then moving to the frame, then to the images (C) at the bottom of the page, to the image (D) at the far bottom of the page, then back to image (A), then on to other areas of the page. The text (opening speech) located in the middle of the page is considered less heavily weighted than image (A) but is more heavily weighted than the three images located at the bottom of the page.

Horizontal Axis

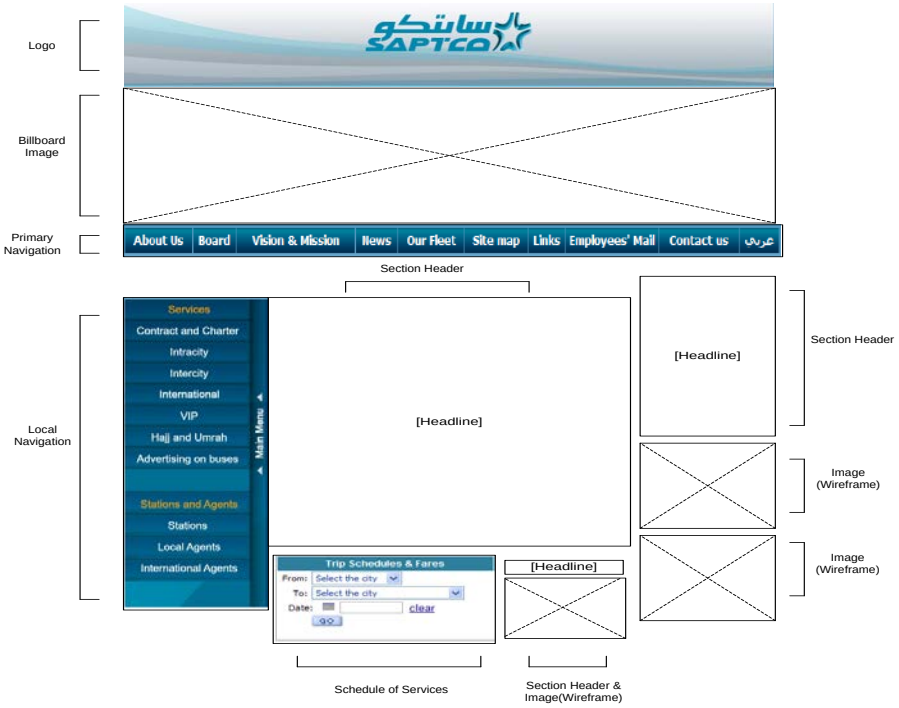
In Figure A3.61, located to the left in the left of the page the text adjacent to the opening speech is considered to be less salient and less valued. Page components are considered less salient to more salient and real to ideal moving from left to right. The text (opening speech) located in the middle of the page which is considered in this case the balancing centre of this site from the horizontal view acts as a kind of vector to guide the viewer to images (B, C and D) located at the bottom of the page. The reading path horizontally is a regular reading path moving from the left side of the page to the text (balancing centre), then on to other areas of the page.

Home Page-Banner Image Analysis (A)

In Figure A3.61, the picture on the left of the image (buildings) reflects the most heavily weighted on the page because of its prominent position at the top left hand side of the image (A). Going from this picture to the picture on the right of the image (bus) is moving from the less salient and less ideal to the more salient and more ideal aspects of the main image (A) on the page. The slight line frame between the two pictures acts as a separator in image (A). The balancing centre of the image is between the two pictures (buildings and bus. The water fountain in the picture of the buildings and the colour (slight black) of the ground in image (A) are considered as vectors toward the second image (bus). The reading path in this case is regular, moving from the left image (buildings) to the second image (bus), then on to other areas of the page.

Figure A3.61: Saptco Page Design

Figure A3.62: Saptco Page Wireframe



Field and Tenor Relations

Field Relations for the components are listed in Appendix 4A (14). Tenor Relations for the components are listed in Appendix 4B (14).

Organising Scheme

A single organising scheme is detected for Saptco in Figure A3.63, relating to "Trip Schedules" and "Fares" functions. As with other dialogues of this kind, an Ambiguous Task-Oriented organising scheme is used.

Image Analysis

In Figure A3.64, image (A) represents a visual offer realised by the absence of a gaze at the viewer. Also, this image is seen from a low angle so the viewer has less power over it and from an oblique angle which excludes the level of involvement. Moreover, the social distance is presented here in a long shot as it represents the public aspects of Saptco. The modality here is considered unreal as the weave of the buildings is only just visible.

Figure A3.63: Saptco Organising Scheme

Image-Text Analysis

The image-text analysis is shown in Figure A3.64 and clarified in Table A3.15.

Figure A3.64: Saptco Image-Text analysis for Components (A...D)

(A)

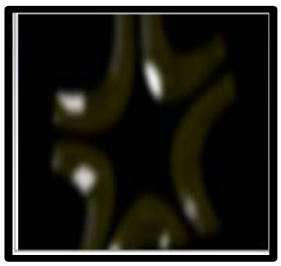
(B)	(C)	(D)
		

Table A3.15: Text-image Relations- Saptco

	Image	Text	Relationship
A	Buildings & Bus	No Text	Homospatiality
B	Logo	No Text	Homospatiality
C	Pyramids	"Egypt"	Exemplification
D	Bus	"Our Fleet"	Exemplification

A3.5.2 Fursan Travel

Fursan Travel was established in 1981 and delivers a variety of travel, tourism and diversified services to a broad spectrum of clients across Saudi Arabia. Fursan has more than 85 branches located Kingdom wide. Fursan has more than 400 employees.

Page Design

The page design depicted in Figure A3.65 consists of a main image (A) positioned on the top right hand side of the page, which represents a sample of sight seeing in Beirut. In the middle of the page, there is a text which represents a "general enquiry" function. At the bottom of the page, there are two main images and each consists of two parts. Each part represents a travel advertisement (Dubai and Bahrain on the left and Malaysia on the right). At the left hand side of the page, there is an image (A) which represents a travel advertisement about London.

Page Wireframe and Components

The page wireframe in Figure A3.66 consists of a logo, company contact, a primary navigation system and billboard image located at the top of the page. In the middle of the page is a column panel header which represents an "online enquiry" module. At the bottom of the page, there is a footer and a local navigation system. Above the footer, there are two

Figure A3.65: Fursan Travel Page Design

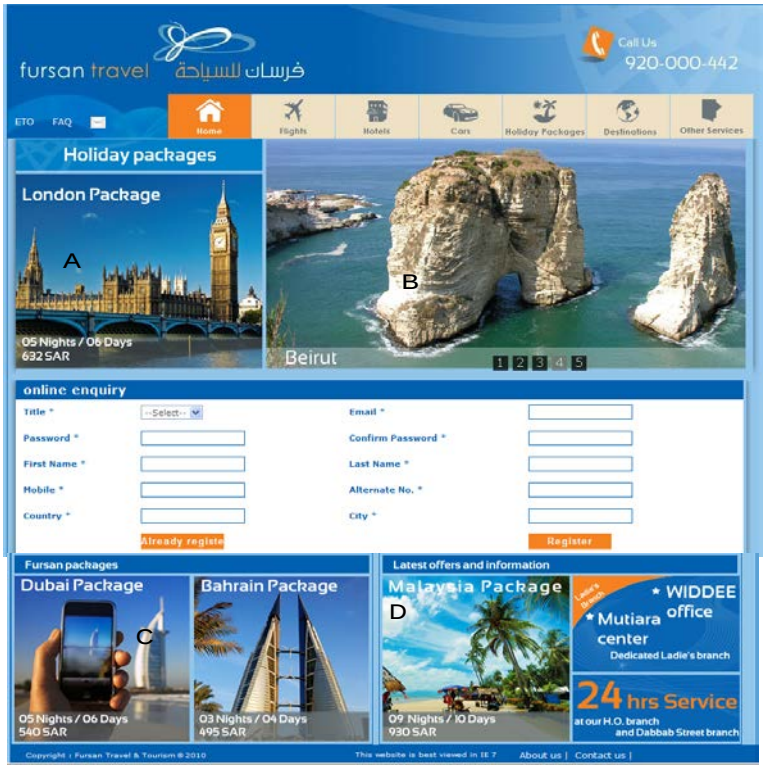
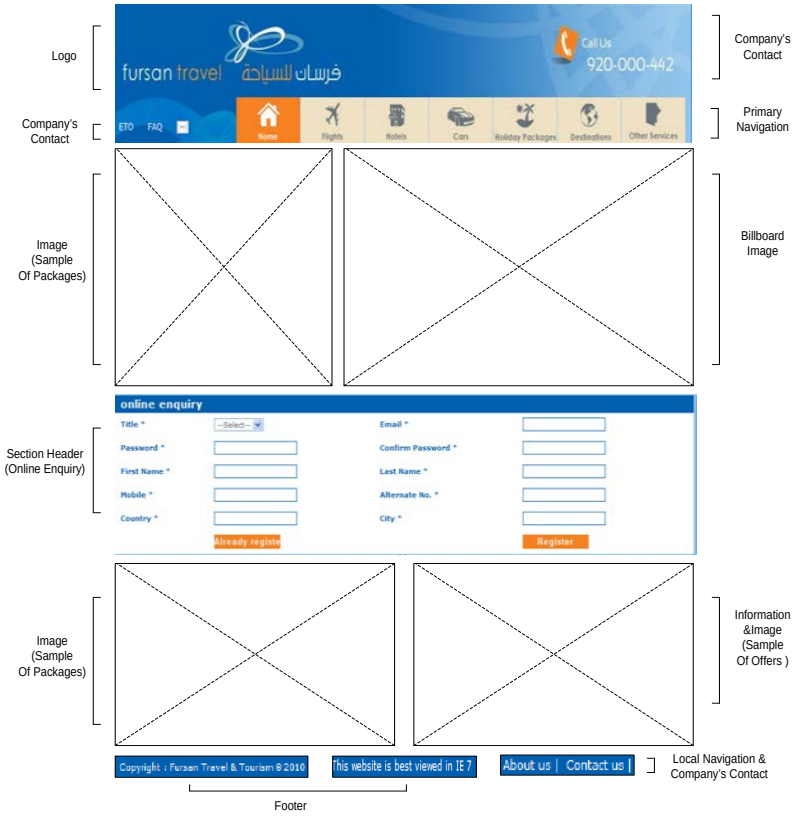


Figure A3.66: Fursan Travel Page Wireframe



column panel headers which represent travel advertisements. At the top left side of the page, another column panel header which also represents travel advertisements is evident.

Compositional Semantics

Vertical Axis

In Figure A3.65, the vertical axis is considered strong because it begins at the top (first sector) of the page with an image (A) that is considered the most salient and comprises two pictures. The first picture (London) (and the second picture (Beirut) reflect the promise aspects of Furson travel regarding the beauty of travelling to these countries which represents the ideal position of the travel agency towards its customers. The picture (London) on the left of the image (A) reflects the most heavily weighted on the page because of its location at the top a left hand side of the image (A). The shade of the colour used in image (A) ranges from a dark blue to a lighter blue at the bottom of the image. The hue of this colour reflects the vector that relates to the text at the bottom (second sector) of the page. A sharp (wide) line or frame separates the two page sectors (image and text). Five vectors lead to information (text) on the company, the hue of the colour in image (A) at the top of the page, the frame (wide line) that separates image (A) from the text, the edges of the mountains in the picture on the right of image (B), the use of the same colour of the background in image (A) is re used in the text (second sector) as a background in some of the images (C and D) at the bottom and end of the base of the bridge in the picture on the left in image (A) (London). The reading path vertically is regular beginning with the picture on the left of image (A) (London), moving to the picture on the right (B) (Beirut), to the wide frame, and on to other areas of the page. The “online enquiry” link (balancing centre) in the middle of the page is considered

less heavily weighted than image (A) at the top of the page, but is more heavily weighted than the four pictures in the image at the bottom of the page.

Horizontal Axis

In Figure A3.65, image (D) (Malaysia) located at the right hand side of the page is more valued and is considered ideal than the other two images on the left of the page (Dubai-Bahrain). Three images adjacent to each other (Dubai-Bahrain–Malaysia) are considered less salient to more salient and real to ideal moving from left to right. The text "online enquiry" in the middle of the page, which is considered in this case the balancing centre of the page from the horizontal view acts as a kind of vector to guide the viewer to the three images (Dubai-Bahrain–Malaysia) at the bottom of the page. The reading path horizontally is a regular reading path moving from the image (Dubai) on the far left of the page to the other images (Dubai-Bahrain–Malaysia), to the "online enquiry" text and then on to other areas of the page.

Home Page- Banner Image Analysis (A and B)

In Figure A3.65, the picture located on the left of image (A) (London) reflects the most heavily weighted on the page because of its prominent location the top left hand side of the image (A). Going from the picture (London) on the left of the image (A) to the picture (Beirut) on the right of the image, is moving from less the salient and less ideal to the more salient and more ideal aspects of the main image (A). A sharp line frame between the two pictures in image (A) acts as a separator. The picture of (Beirut) on the right of image (B) includes the balancing centre of the image (the edges of the left mountain). The edges of the bridge and the clock of the tall tower in the picture (London) are considered as vectors toward the second image (B) (Beirut). The reading path in this case is regular moving from the left image (A) (London) to the image (B) (Beirut), and on to other areas of the page.

Field and Tenor Relations

Field Relations for the components are listed in Appendix 4A (15). Tenor Relations for the components are listed in Appendix 4B (15).

Organising Scheme

The "online enquiry" form in Figure A3.67, not surprisingly uses an Ambiguous Task-Oriented Organising Scheme.

Figure A3.67: Fursan Travel Organising Scheme

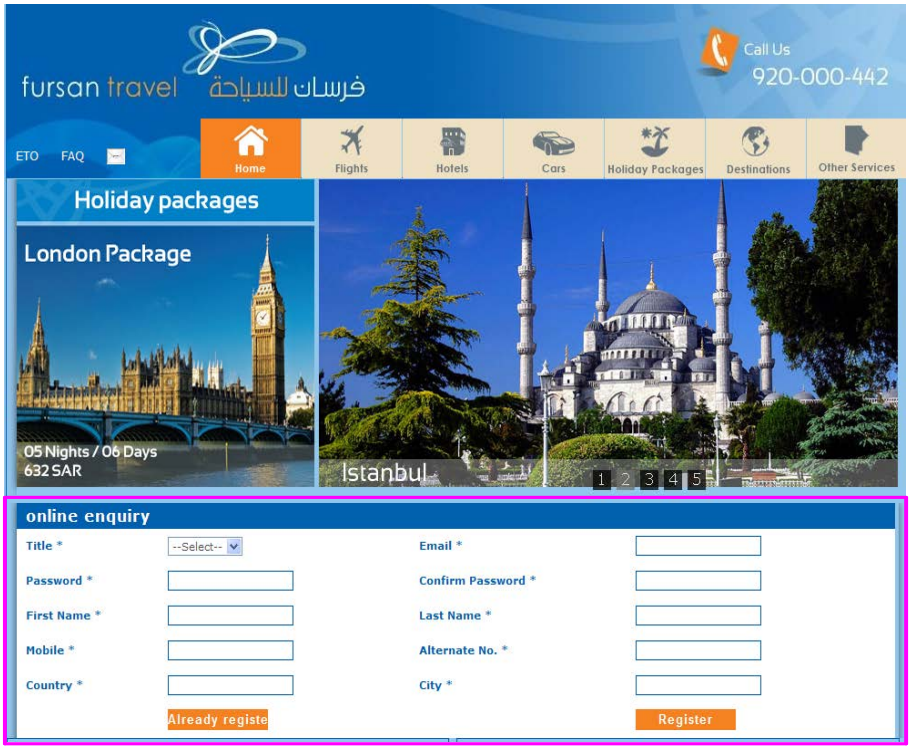


Image Analysis

In Figure A3.65, image (A) represents a visual offer realised by the absence of a gaze at the viewer. Also, this image is seen from a low angle so the viewer has less power over it and from oblique angle which excludes the level of involvement. Moreover, the social distance is presented here in a long shot as it represents the public aspects of Fursan Trave. The modality here is real.

Image-Text Analysis

The image-text analysis is shown in Figure A3.68 and clarified in Table A3.16.

Figure A3.68: Fursan Travel Image-Text analysis for Components (A...D)

(A)	(B)
	
(C)	(D)
	

Table A3.16: Text-image Relations- Fursan Travel

	Image	Text	Relationship
A	Tower in London	"Holiday Packages...London Package…05 Nights…"	Augmentation
B	Mountains in the sea	"Beirut"	Exemplification
C	Tower of Dubai	"Dubai Package…05 Nights…"	Augmentation
C	Tower of Bahrain	"Bahrain Package…05 Nights…"	Augmentation
D	One of the Malaysia beaches	"Malaysia Package…05 Nights…"	Augmentation

A3.6 Energy

A3.6.1 Gasco

Gasco was established to implement the process of filling and distribution of liquefied petroleum gas and by-products in accordance with a 1975 governmental resolution. Gasco commenced operations in 1963 after the merger of the National Gas Company in Dammam and its branches in Riyadh and Jeddah. Gasco distributes products to consumers through authorized agents and those who deal directly with filling stations owned by the company throughout Saudi Arabia. Gasco also owns shares in Saudi Factory for Cylinder 30% and National Gas Industry 6%. The main activity of the company is transportation, filling and marketing of LPG, which consists of both butane and propane gases or butane or propane separately. Gasco's business activities also include marketing cylinders, empty tanks, related

spare parts and tank transportation of equipment to consumer sites. It also includes all uses of gases for residential, industrial, agricultural, or commercial purposes. Gasco has 2,044 employees and has a Paid-Up capital of 750,000,000 SAR.

Page Design

The page design featured in Figure A3.69 consists of a main image (A) located at the top of the page which represents samples of Gasco's products (white Gas tanks). In the middle of the page there is an image (B) which represents another of the company's products (green gas tank). At the bottom of the page, there is a text which represents the company's welcoming speech by the Director. On the right hand side, are links which represent advertising and mailing lists. On the left hand side is "news" and "voting" links.

Page Wireframe and Components

The page wireframe in Figure A2.70 consists of a logo, a local navigation system and billboard image located at the top of the page. In the middle of the page are two section headers, one of which facilitates access to products. At the bottom of the page, there is a page footer and a local navigation system. Above the footer is a section header. On the left hand side of the page there are two column panel headers which led to "latest news" and a "voting" application. On the right hand side of the page, three column panel headers lead to a company "contact", some advertisements and a "mailing list" module.

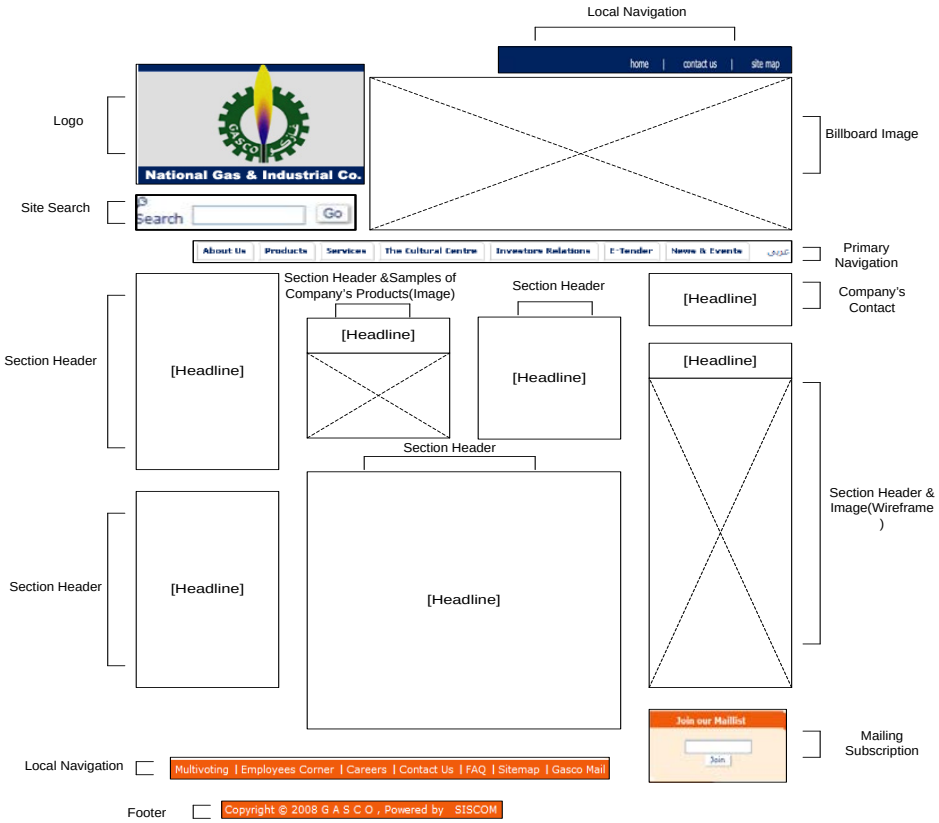
Compositional Semantics

Vertical Axis

In Figure A3.69, the vertical axis is considered strong because it begins at the top (first sector) of the page with the company logo that is considered the most salient on the page. Image (A) (large storage) reflects Gasco's promise aspects regarding the purity of gas products and healthy clean environment which represents the ideal position of the company towards its customers. This image also reflects the most heavily weighted on t he page due to its location at the top of the page. The shade of the colour used in image (A) goes from brilliant white to a less prominent shade of white at the bottom of the image. The hue of this colour reflects the vector that relates to the text at the bottom of the page, which is considered the second sector of the page. A sharp (navigation) line or frame separates the two page sectors (image and text). Four vectors lead to information (text) on the company, the hue of

Figure A3.69: Gasco Page Design

Figure A3.70: Gasco Page Wireframe



the colour used in image (A) at the top of the page, the frame (wide line) that separates the top image (A) from the text, the large white square sections of the gas storage containers in the top image (A) lead to the other small storages (C) in the bottom right corner and the same colour used in the background of the image (large storages) is reused in the text (second sector) at the bottom of the page as a background for the welcoming speech link and in the image (small storages) (C) at the bottom of the page. The reading path vertically is circular beginning with the picture of the large storages in image (A) at the top of the page, then to the image (C) (small storages) on the right of the page, to the image (B) in the middle of the page, then returning to image (A) and on to another areas of the page. The image (B) in the middle of the page is considered less heavily weighted than image (A) but i more heavily weighted than image (C) (small storages) at the bottom of the page.

Horizontal Axis

In Figure A3.69, the picture on the left of image (B) (Products) is less salient and less valued. The two images (B) & (C) (Products & small storages) are considered less salient to more salient and real to ideal moving from left to right. The image (B) in the middle (of the page which is considered in this case the balancing centre of this site from the horizontal view acts as a kind of vector to guide to the viewer to the text (welcoming speech) at the bottom of the page. The reading path horizontally which is a regular reading path moving from the text on the left hand side of the page to the text (welcoming), to the image (C) on the right side of the page, to image (B) (Products), then on to other areas of the page.

Home Page- Banner Image Analysis (A)

In Figure A3.69, the picture (Logo) positioned on the left of the image (A) reflects the most heavily weighted on the page because of its location at the top left hand side of the image (A). Going from the picture of the logo on the left of image (A), to the picture (large storages) on the right hand side of image (A) (Large Storages) is moving from less salient and less ideal to the more salient and more ideal aspects of image (A). A sharp frame acts as a separator between the two pictures in image (A). The picture on the right side of the main image (A) (Large Storages) includes the balancing centre of the image. The green edges of the circle part of the logo picture and the fire part of the logo are considered as vectors toward the second image (A) (Large Storages). The reading path in this case is regular, moving from the logo to the left of image (A) to image (A) (Large Storages) then on to other areas of the page.

Field and Tenor Relations

Field Relations for the components are listed in Appendix 4A (16). Tenor Relations for the components are listed in Appendix 4B (16).

Organising Scheme

In Figure A3.71, the “image gallery” on the homepage is organised using an Ambiguous Metaphor-driven organising scheme.

Figure A3.71: Gasco Organising Scheme

Image Analysis

In Figure A3.69, image (A) represents a visual offer realised by the absence of a gaze at the viewer. Also, this image is seen from a high angle so the viewer has more power over it and from an oblique angle which excludes the level of involvement. Moreover, the social distance is presented here in a medium shot as it represents the business aspects of Gasco. The modality here is unreal as the weave of the large storages are only just visible.

Image-Text Analysis

The image-text analysis is shown in Figure A3.72 and clarified in Table A3.17.

Figure A3.72: Gasco Image-Text analysis for Components (A...C)

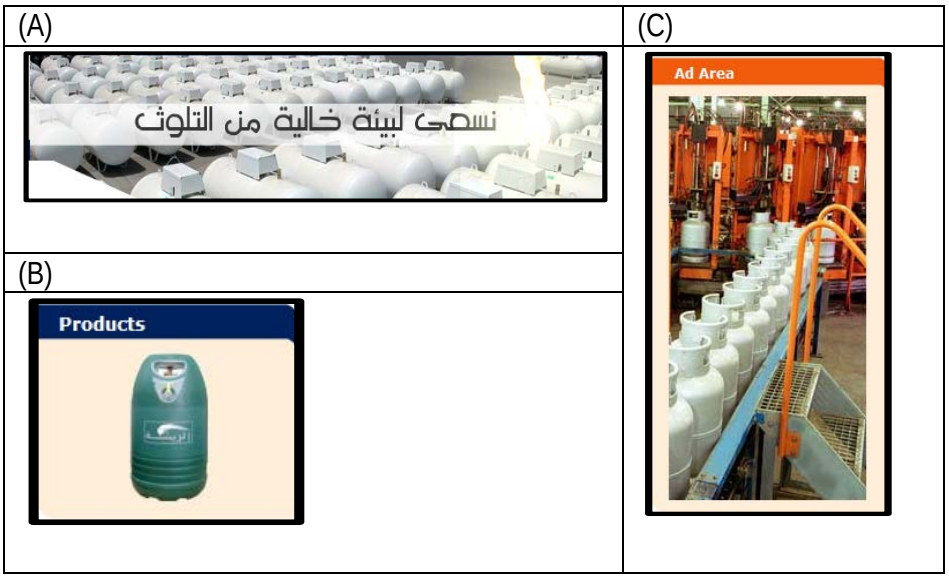


Table A3.17: Text-image Relations- Gasco

	Image	Text	Relationship
A	Large gas storages	"Environment free from pollution"	Divergence
B	Modern gas storage	"Products"	Exemplification
C	Process of filling the gas storages	"Ad Area"	Divergence

A3.6.2 Saudi Electricity Company (SECO)

SECO specializes in generating and distributing electrical power supply within the Kingdom of Saudi Arabia. It was incorporated in 1999 and has 27,782 employee and a Paid-Up Capital of 41,665,930,000 SAR.

Page Design

The page design depicted in Figure A3.73 consists of a main image (A) (three workers monitoring operations) which is positioned at the top of the page. In the middle of the page are six images which represent a range of tools and services. The first image, located on the left, includes text which represents the annual report of the company, samples of bills and online services. Positioned at the top left hand side of the page are links in a column panel which represent information about the company. At the bottom right hand side of the page is a site search tool, a site map, information on company locations and legal issues and a company contact link.

Page Wireframe and Components

The page wireframe in Figure A3.74 consists of a logo, a primary navigation system, billboard image and a local navigation scheme located next to an image (A). In the middle of the page are five images (C, D, E, F and G) which represent modules that facilitate access different services and tools such as payment and checking energy consumption. At the bottom of the page, is a footer which leads to information and search tools. At the bottom left

hand side of the page is an image with an associated text in a column panel which provides accessibility to some financial information on the company.

Compositional Semantics

Vertical Axis

In Figure A3.73, the vertical axis is considered strong because it begins at the top (first sector) of the page with an image (A) that is considered the most salient on the page. This image (three men working on a control station) reflects SECO's promise regarding the global trends of providing power services which represents the ideal position of the company towards its customers. This image (A) also reflects the most heavily weighted on the page because of its prominent position at the top of the page. The hue of the colour used in the main image (A) reflects the vector that relates to the text located on the far left of the bottom (second sector) of the page. A sharp line or frame separates the two page sectors (top and bottom). Eight vectors lead to information on the company (annual report and electricity bills), the hue of the colour used in the top image, the frame (line) that separates the top image (A) from the bottom sector of the page (text), to the left arm of the man on the far left

Figure A3.73: SECO Page Design

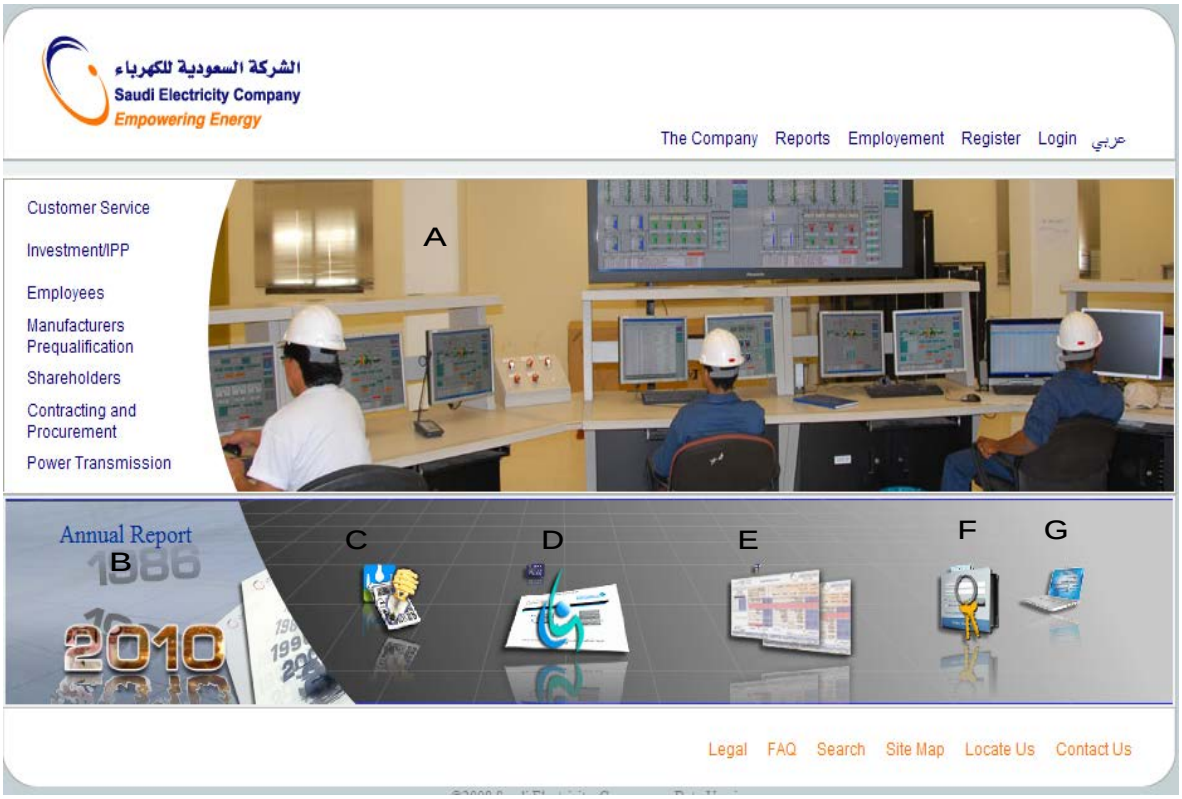
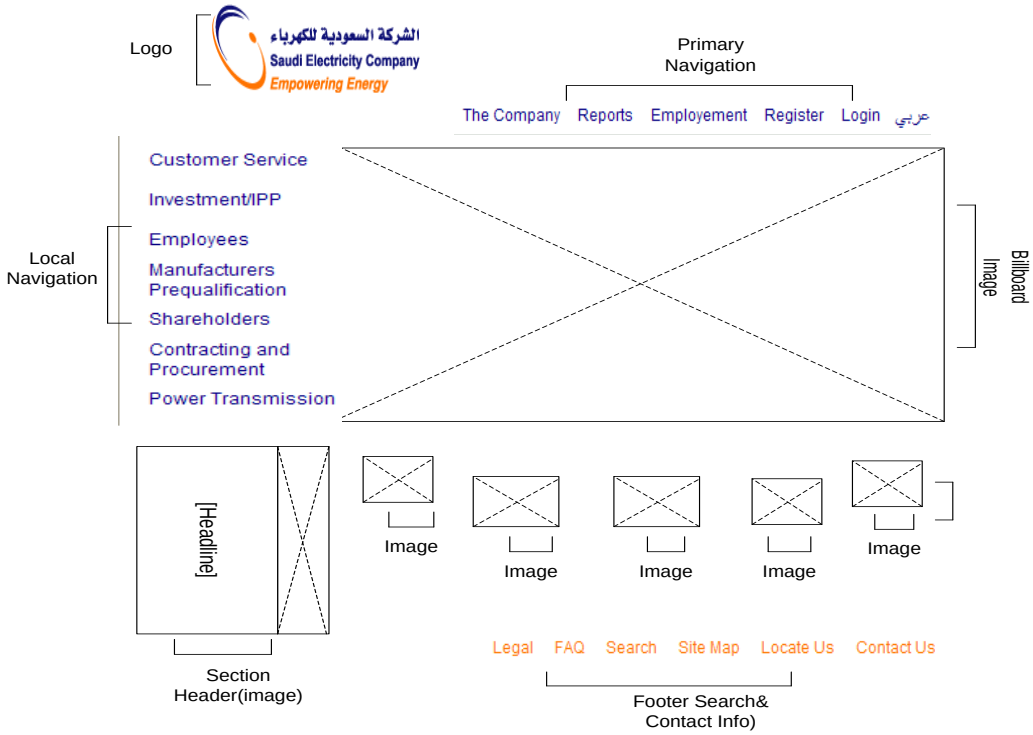


Figure A3.74: SECO Page Wireframe



of image (A) which points directly to the annual report icon, the colour (blue) of the clothes of the two men sitting in the middle and located to the far right hand side of image (A), the repeated images of the screens shots depicted in image (A) that look similar to the electricity bill image (E) at the bottom (second sector) of the page. In addition, the colour (black) of the chairs in image (A) is repeated again in the background of the images at the bottom (second sector) of the page. Also, the blue and white colours used in image (A) at the top of the page (first sector) are repeated in the images at the bottom (second sector) of the page. The colour (orange) featured in image (A) is repeated in the image in the bottom left hand side of the page in the text (2010) and in the footer. The reading path vertically is circular beginning with the image (A) at the top of the page, moving to the frame, then to the images (Annual Report) located at the bottom left hand side of the page, to the image on the far bottom right (laptop), returning to image (A) at the top of the page, then on to other areas of the page. The image (B) at the far left of the bottom of the page is considered less heavily weighted than image (A) at the top of the page, but is more heavily weighted than the five images (C, D, E, F and G) located at the bottom of the page.

Horizontal Axis

In Figure A3.73, to the left of the page, the text (next to the main image-local navigation) is less salient and less valued. The two images (D, E) in the bottom middle sector of the page are considered in this case the balancing centre of the page site from the horizontal view. The six images (B, C, D, E, D and G) located at the bottom of the page (second sector) act as a kind of vector in themselves and also to the footer at the bottom of the page. The reading path

horizontally which is a regular reading path moving from the image (annual report) on the left hand side of the page, to the rest of the images on the page, to the footer, then on to other areas of the page.

Field and Tenor Relations

Field Relations for the components are listed in Appendix 4A (17). Tenor Relations for the components are listed in Appendix 4B (17).

Organising Scheme

A single organising scheme, relating to "registration" is depicted in Figure A3.75. As with other dialogues of this kind, it uses an Ambiguous Task-Oriented organising scheme.

Image Analysis

In Figure A3.73, image (A) represents a visual offer realised by the absence of a gaze at the viewer. Also, this image is seen from high angle so the viewer has more power over it and from an oblique angle which excludes the level of involvement. Moreover, the social distance is presented here in a medium shot as it represents the business aspects of SECO. The modality here is real.

Figure A3.75: SECO Organising Scheme

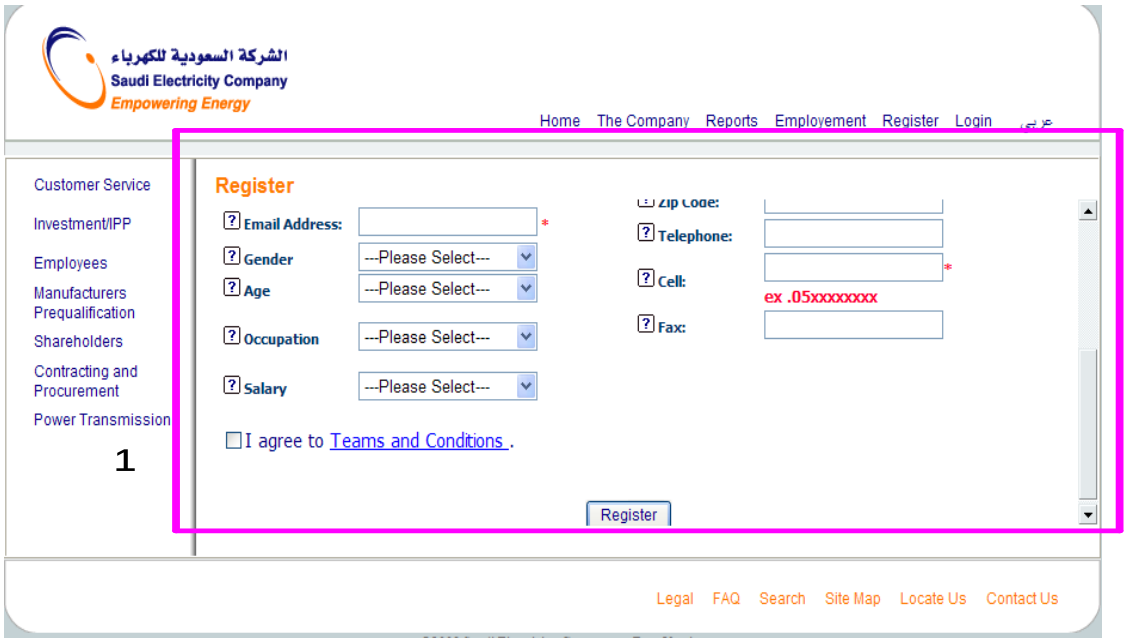


Image-Text Analysis

The image-text analysis is shown in Figure A3.76 and clarified in Table A3.18.

Table A3.18: Text-image Relations- SECO

	Image	Text	Relationship
A	Three men working	No Text	N/A
B	Papers	"Annual Report…2010"	Augmentation
C	Light plug in a calculator	No Text	Homospatiality
D	Virtual Face on a paper	No Text	N/A
E	Bills	No Text	Homospatiality
F	Keys on Screen	No Text	Homospatiality
G	Laptop	No Text	Homospatiality

Figure A3.76: SECO Image-Text analysis for Components (A...G)

(A)

(B)

(C)

(D)

(E)

(F)

(G)

A3.7 Others

A3.7.1 Advanced Electronics Company (AEC)

Advanced Electronics (AEC) was established in 1988 to create local capabilities in strategic areas such as advanced manufacturing technologies, communication systems and product support. AEC offers services that include Design, Development, Manufacture, Testing, Modifications, Upgrades, Repair and Logistical Support of Electronic Products and Systems

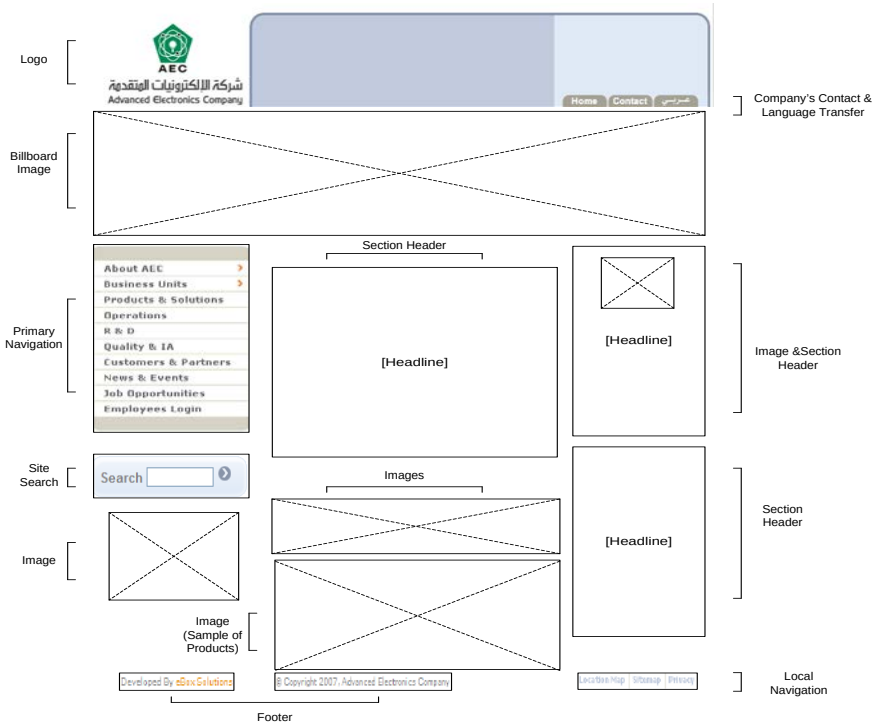
for Military, Civil, and Industrial Customers. AEC has 2,100 employees and a Paid-Up Capital of 110.500.000 SAR.

Page Design

The page design depicted in Figure A3.77 consists of a main image (A) positioned at the top of the page. This image comprises of several workers, airplanes, machines and car pictures. In the middle of the page, there is a main text which represents the company's background. At the bottom of the page, there are two sections; the first consists of several photos that represent different company processes and its products and services. The second represents an example of one of the company's more recent products (ADDAD). On the right side of the page is an image connected to a text that represents "current events "and behind this is a

Figure A3.77: AEC Page Design

Figure A3.78: AEC Page Wireframe



"news" section. On the left hand side of the page, there is the search link and a column panel containing general information about AEC.

Page Wireframe and Components

The page wireframe depicted in Figure A3.78 consists of a logo, a contact link, a language translator and a billboard image located at the top of the page. In the middle of the page, three column panel headers which facilitate access to a primary navigation system, a text block and a section header (with an image) providing information about the company and leading to "events" is detected. At the bottom of the page is a footer and a local navigation system. Above the footer, there are two section headers which facilitate access to sample of products. At the left bottom of the page, section headers representing a site search and a company advertisement.

Compositional Semantics

Vertical Axis

In Figure A3.77, the vertical axis is considered very strong because it begins at the top (first sector) of the page with an image (A) that comprises several pictures. This image (A) represents AEC's promise aspects which represents the ideal position of the company towards its customers. This image (A) also reflects the most salient on the page. On image (A), the picture on the left of the image (man calling on the phone) is considered here the most heavily weighted because of its location in the far left hand side of the image. The shade of the colour used in image (A) ranges from a dark to lighter blue. The hue of this colour reflects the vector that relates to the text located at the bottom (second sector) of the page. A sharp line or frame separates the two page sectors (image and text). Four vectors lead to information (text) on the company, the hue of the colour used in image (A), the frame (line)

that separates image (A) from the text at the bottom of the page, the picture of three airplanes, the use of the same colour (blue) used in image (A) is reused again in the text block as a back ground.

Horizontal Axis

In Figure A3.77, positioned to the right of the page, image (B) (under the title event) that represents the most salient part of the page based is noted. The text located in the middle of the page, which is considered in this case the balancing centre of the page acts as a kind of vector to lead the viewer to image (B) (under the title "event") even though image (B) has no relationship to the text in the balancing centre. The reading path horizontally which is a circular reading path moving from the balancing centre (text in the middle of the page) to the image (B) on the right hand side of the page (under the title "event"), then back to the text again, then on to other areas of the page.

Home Page-Banner Image Analysis (A)

In Figure A3.77, the picture (man using the mobile phone) on the left hand side of the page is the most heavily weighted because of its position at the top far left of the image (A). Moving from left to the right of the page reflects the less salient image (man using the mobile phone) to the most salient (four men working on machines). The image (three airplanes) represents the balancing centre of the whole image. These three airplanes have been ordered from the top down based on their position in the air (departing-normal flying-arriving). The airplane (normal flying) is considered the balancing centre of this image. The airplane at the top (departing) is considered the most salient. The wings of each airplane are considered a vector toward the bottom of the airplane. The reading path for the airplanes is circular, moving from top to bottom and back to the top. The airplanes are separated by sharp frames. The images from the left to the right side of the page are separated by sharp lines and frames. In each image, a vector pointing toward the next image as follows is detected; the hand and the mobile (man calling on the mobile) are vectors to the (tower) image, the end of the (tower) image is a vector to the next image (man using computer), the screen of the computer and the lights of the car in that image are vectors to the airplanes and the wings and front area of the airplanes are vectors to the last picture (four men). The reading path of this image is regular starting from the left picture (man calling on mobile phone) to other areas of the page

Field and Tenor Relations

Field Relations for the components are listed in Appendix 4A (18). Tenor Relations for the components are listed in Appendix 4B (18).

Organising Scheme

In Figure A3.79, the AEC page organises its "latest news" using an Exact Chronological organising scheme, while in Figure A3.80 the AEC "Products and Solutions" link utilises an Ambiguous Topical organising scheme to categorise the information presented.

Figure A3.79: AEC Organising Scheme (1)

Figure A3.80: AEC Organising Scheme (2)

Image Analysis

In Figure A3.77, image (A) represents a visual offer realised by the absence of a gaze at the viewer. Also, this image is seen from a low angle, so the viewer has less power over it and from a frontal angle, which includes the level of involvement. The social distance is represented here in a medium shot as it represents the business aspects AEC. The modality here is real.

Image-Text Analysis

The image-text analysis is shown in Figure A3.81 and clarified in Table A3.19.

Figure A3.81: AEC Text-image analysis for Components (A...C)

(A)

(B)

(C)

Table A3.19: Text-image Relations- AEC

	Image	Text	Relationship
A	Man using a phone and E-Tower and Man using Laptop with a car and Three airplanes and Men working on Machines	"AEC…is an ideal…"	Divergence
B	People gathering together after the ceremony	"Event…AEC Present 12th Annual Prize…"	Augmentation
C	Sample of Products	"ADDAD Digital……"	Exemplification

A3.7.2 Sabic

Saudi Basic Industries Corporation (Sabic) is the leading industrial company in Saudi Arabia. It is the largest non-oil company in the Middle East and one of the world's 10 largest petrochemicals manufacturers. Sabic is composed of six strategic business units (SBUs). These are: Basic Chemicals, Intermediates, Polymers, Specialized Products, Fertilizers, and Metals. These six business units produce different kinds of products organized into four categories: Chemicals - Basic Chemicals, Intermediates and Specialized Products (three SBUs), Plastics - Polymers (one SBU), Fertilizers (one SBU), and Metals (one SBU). The Basic Chemicals unit products include methanol, ethylene, propylene, benzene, xylene, styrene, crude industrial ethanol, butadiene and butadiene-1. The Intermediates and Specialized Products units produce ethylene glycol, ethylene dichloride, and vinyl chloride monomer and dioctyl phthalate. The Plastics - Polymers unit provides polymeric materials and allied products. Main products include polyester, melamine, and polypropylene, PVC, polystyrenes, polyethylene (PE), polypropylene (PP) and their by-products. The Fertilizers unit produces ammonia and urea, phosphate and liquid fertilizers. The Metals unit is a supplier of flat steel, long steel and aluminium products. Sabic owns sites and offices in Europe, Asia-Pacific and America. Sabic was established in 1976, has 32,000 employees and a Paid-Up Capital of 30,000,000,000 SAR.

Page Design

The page design depicted in Figure A3.82 consists of a main image (A) which is positioned at the top of the page. Image (A) consists of a picture of a woman looking to her cell phone. Another image (B) located next to image (A) is a graphical representation of the location of Sabic’s ranches. In the middle of the page, there is a text which represents the company’s welcoming speech and next to this is a link to “latest news”. At the bottom of the page, there are two images with associated text which represents financial information on Sabic.

Page Wireframe and Components

The page wireframe depicted in Figure A3.83 consists of a logo, site search facility, language translator, local navigation system, billboard image and section header detailing Sabic branches positioned at the top of the page. In the middle of the page are two column panels headers which lead to background information on Sabic and an updated news link. At the bottom of the page there is a footer Above the footer, two column panel headers leading to financial information on Sabic are noted.

Figure A3.82: Sabic Page Design

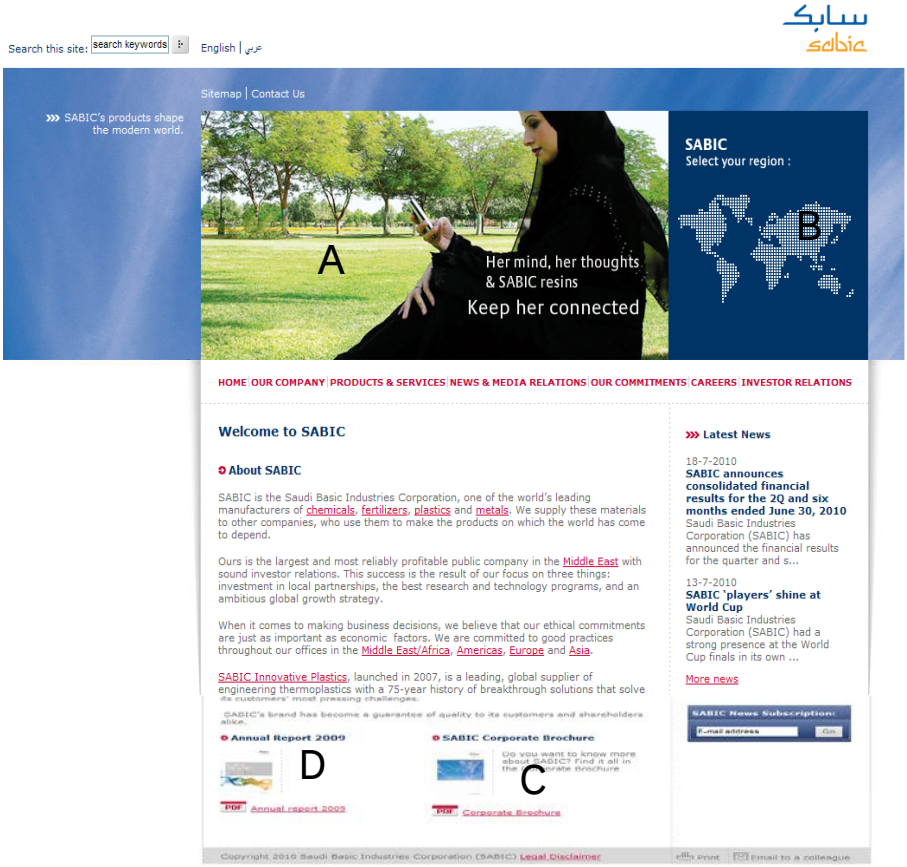
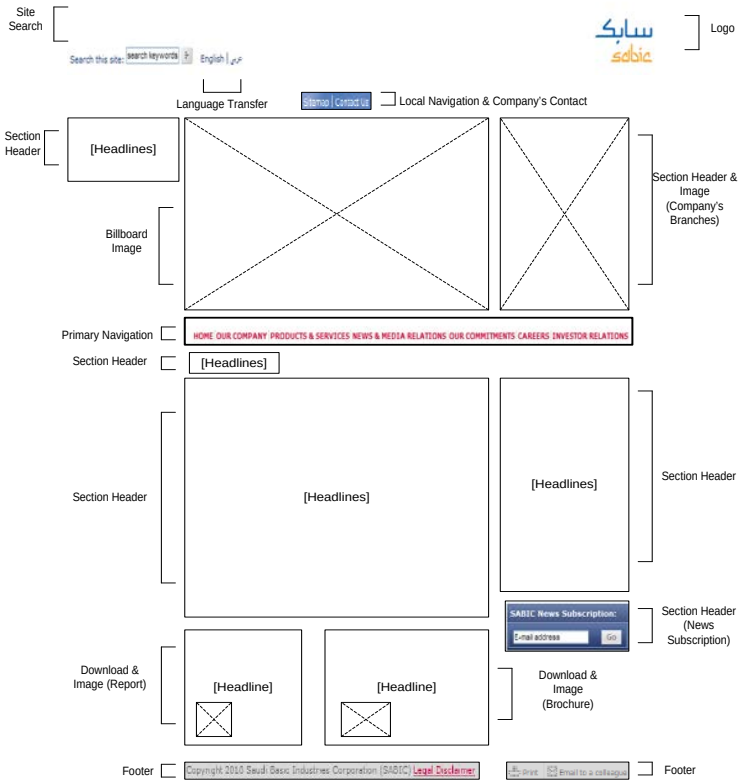


Figure A3.83: Sabic Page Wireframe



Compositional Semantics

Vertical Axis

In Figure A3.82, the vertical axis is considered strong because it begins at the top (first sector) of the page with an image (A) that considered the most salient. The image comprises two pictures. The first picture, (women) and the second (map) reflect Sabic's promise regarding the quality of their services offering which represents the ideal position of the company towards its customers. The picture (women) to the left of the image reflects the most heavily weighted on the page because of its position at the top left hands side of the image. The hue of the colour used in the image reflects the vector that relates to the text located at the bottom (second sector) of the page. A sharp line or frame separates the two sectors (image and text). Four vectors lead to information (text) on the company, the hue of the colour used in the top image (A), the frame (line) that separates the top image (A) from the verbal text at the bottom (second sector) of the page, the mobile phone in the picture of the women in image (A) and the use of the same colour of the background in the image (A and B) is re used again in the text (second sector) as a background in some areas at the bottom of the page. The reading path vertically is regular beginning with the picture (woman) in image (A) at the top of the page, then to the frame, then on to other areas of the page. The image (A) located at the top of the page is considered more heavily weighted than the other areas of the site.

Horizontal Axis

In Figure A3.82, located to the left of the page, the text "About Sabic" is considered less salient and less valued than the text "Latest News". The text "About Sabic" located in the middle of the page, which is considered in this case the balancing centre of the page from the

horizontal view acts as a kind of vector to guide the viewer to other areas of the page. The reading path horizontally, is considered a regular reading path.

Field and Tenor Relations

Field Relations for the components are listed in Appendix 4A (19). Tenor Relations for the components are listed in Appendix 4B (19).

Organising Schemes

In Figure A3.84, a component which enables the user to select their region utilises an Exact Geographical organisation scheme (A), while the latest news is organised by means of an Exact Chronological scheme (B). Figure A3.85 shows a Registration form, which like most non-trivial dialogues is organised around an Ambiguous Task-Oriented organising scheme.

Figure A3.84: Sabic Organising Scheme (1)

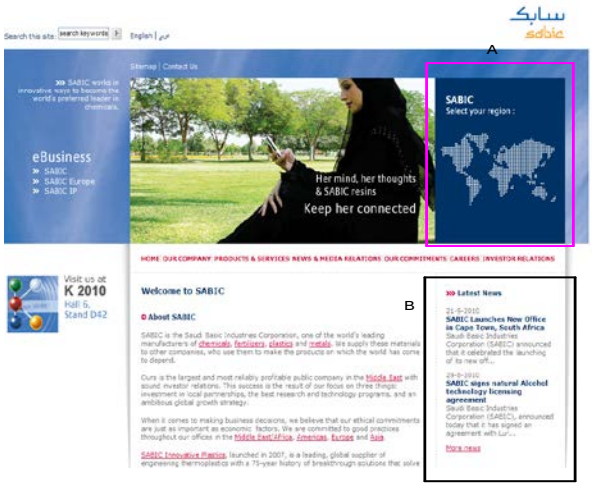


Figure A3.85: Sabic Organising Scheme (2)

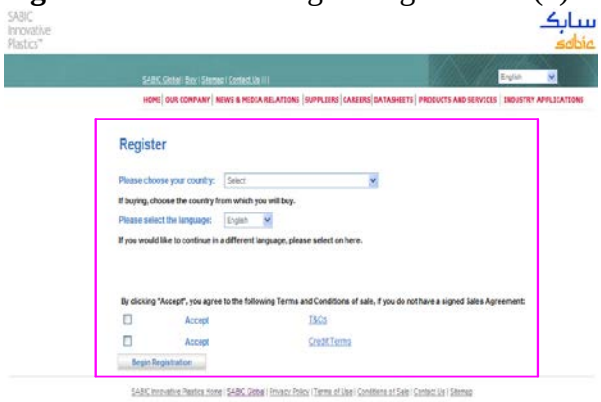


Image Analysis

In Figure A3.82, image (A) represents a visual offer realised by the absence of a gaze at the viewer. Also, this image is viewed from a low angle so the viewer has less power over it and viewed from an oblique angle which excludes the level of involvement. Moreover, the social distance is presented here in a close shot as it represents the personal aspects of Sabic. The modality here is real.

Image –Text Analysis

The image-text analysis shown in Figure A3.86 and is clarified in Table A3.20.

Figure A3.86: Sabic Text-image analysis for Components (A...D)

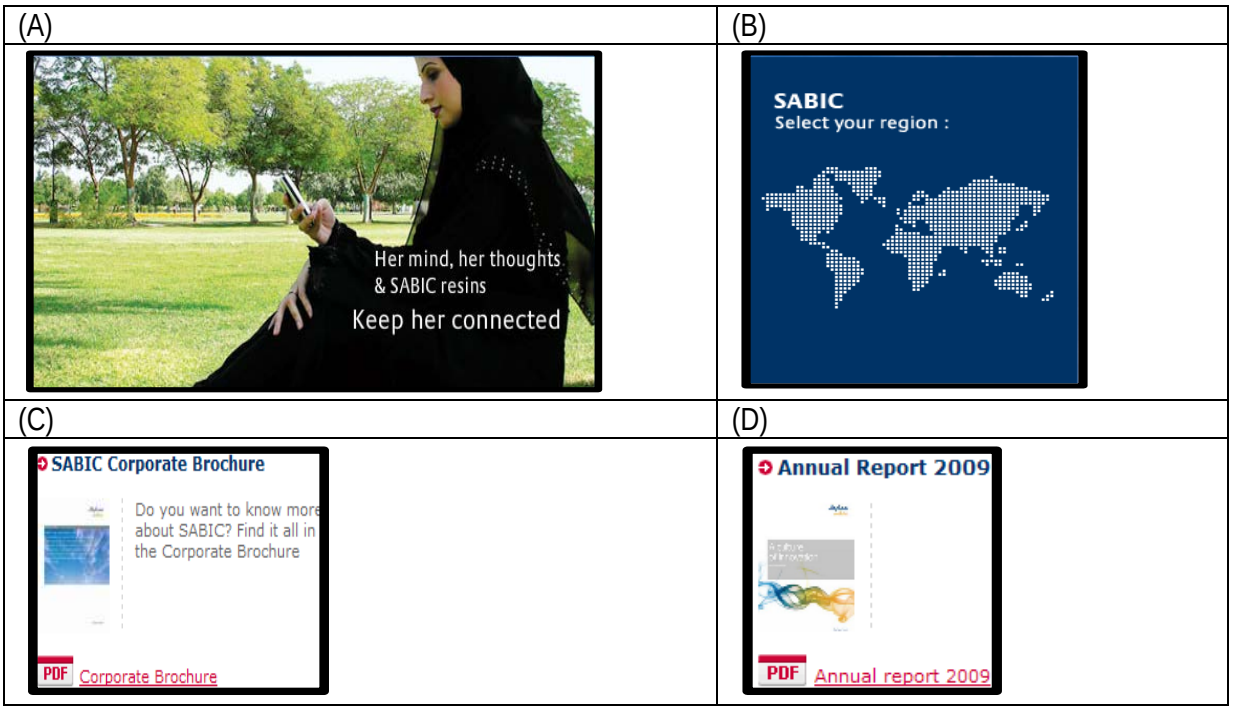


Table A3.20: Text-image Relations - Sabic

	Image	Text	Relationship
A	Women using the "resins" mobile phone	"Her mind, her…"	Enhancement
B	Map	"Select your region"	Clarification
C	Sample of a page in the brochure	"Corporate Brochure…"	Exemplification
E	Sample of a page in the Report	"Annual report 2009"	Exemplification

A3.7.3 Jarir

Jarir specializes in the sale of office supplies, school supplies, IT products, books and import of school stationery supplies, computer equipment, books and technical and engineering tools for wholesale and retail markets in Saudi Arabia. The company has also developed two trademarks, namely, Rocco and Royal Falcon. Jarir was founded in 1979, has 1,846 employees and a Paid-Up Capital of 400,000,000 SAR.

Page Design

The page design depicted in Figure A3.87 consists of a main image (A) which is located at the top of the page representing a "Ramadan Schedule". There is another image (B) behind it representing "catalogues". In the middle side of the page there is an image which represents some of products offered by of the company, for example, "i Pad". At the bottom of the page there are eight images (E-L) with associated texts which represent advertisement for Jarir products (CBU, Laptop, Cameras… etc). On the right hand side of the page images of advertisements for jobs opportunities and software downloads are visible.

Page Wireframe and Components
The page wireframe depicted in Figure A3.88 consists of a logo, primary navigation system and billboard image (Ramadan schedule), located at the top of the page. In the middle of the page there is a one section header which leads to a price check facility for some products which are sold by the company. At the bottom of the page, there is a footer and a local navigation system. Above the footer, there are eight separate section headers which represent products advertisements. On the right side of the page, three column panel headers related to job vacancies and two modules to facilitate software downloads and 'dsl' prices are noted.

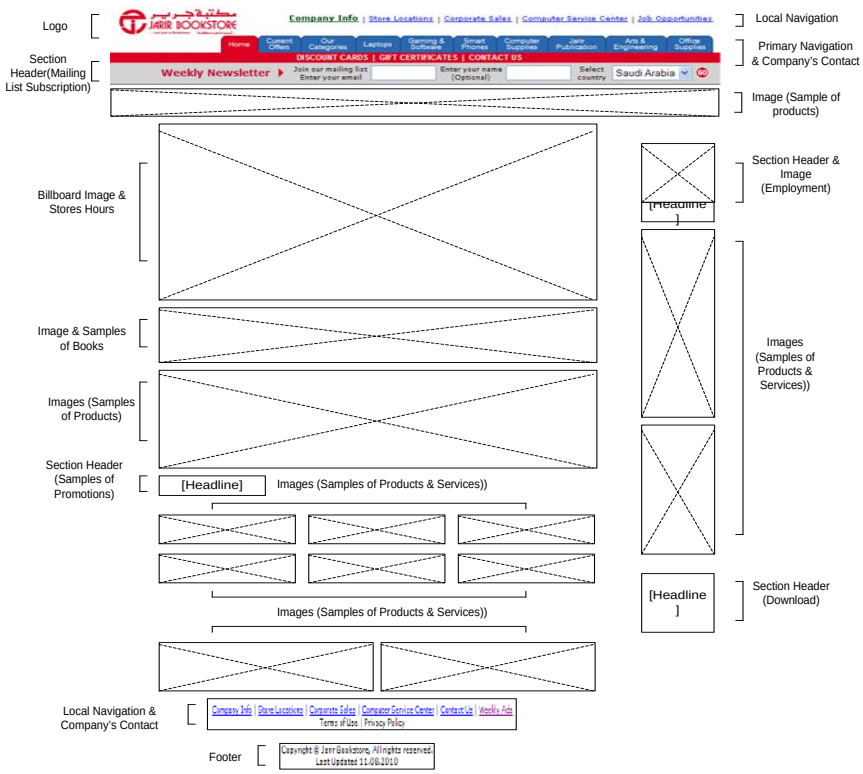
Compositional Semantics

Vertical Axis

In Figure A3.87, the vertical axis is considered strong because it begins at the top (first sector) of the page with an image (A) that is considered the most salient on the page. This image reflects Jarir's promise to its customers and is considered the most heavily weighted on the page because of its prominent location at the top of the page. The shade of the colour used in the image (A) ranges from dark to lighter at the bottom of the image. The hue of this colour reflects the vector that relates to the second sector (bottom) of the page. A wide line (Magazine) (B) or frame separates the two page sectors (top and bottom). Four vectors lead to information (text) on the company, the hue of the colour in image (A), the frame (wide line) that separates image (A) from the bottom (second sector) of the page, the edge of the wide

Figure A3.87: Jarir Page Design

Figure A3.88: Jarir Page Wireframe



line (cover of the magazine) and the use of the same colour of the background in image (A)

is re used again as a background in some images in the bottom (second sector) of the page. The reading path vertically is regular starting with the image (A) then moving to the wide frame (B) then on to other areas of the page. The picture (magazine) in image (B) located in the middle of the page is considered less heavily weighted than the top image (A) but is more heavily weighted than the other images (D, E, F, G, H, I, J, K and L) located at the bottom of the page.

Horizontal Axis

In Figure A3.87, image (C) (job opportunities) located at the right of the page is considered more salient and more valued. Image (B) in the middle of the page, which is considered in this case the balancing centre of this site from the horizontal view acts as a kind of vector to guide the viewer to the images at the bottom of the page. The reading path horizontally is a regular reading path moving from image (E) (Amazing savings) on the left side of the page, then on to other areas of the page.

Field and Tenor Relations

Field Relations for the components are listed in Appendix 4A (20). Tenor Relations for the components are listed in Appendix 4B (20).

Organising Scheme

The Online Job Application link in Figure A3.89 utilises an Ambiguous Task-Oriented Organising Scheme.

Figure A3.89: Jarir Organising Scheme

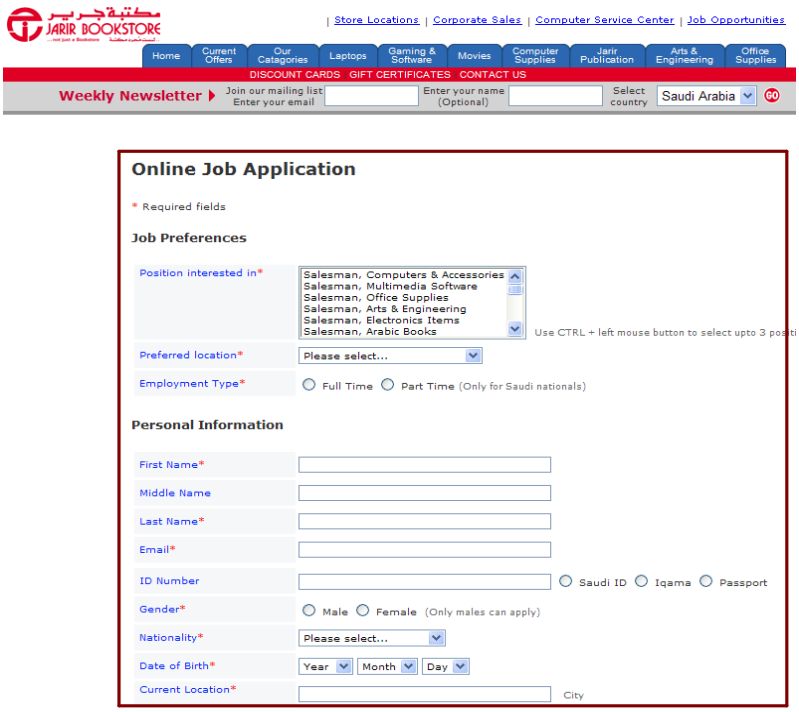


Image Analysis

In Figure A3.87, image (C) represents a visual demand realised by a gaze at the viewer. Also, this image is seen from a low angle so the viewer has less power over it and is seen from a frontal angle which includes the level of involvement. The social distance is presented here in a medium shot as it represents the business aspects of Jarir. The modality here is real.

Image-Text Analysis

The image-text analysis is shown in Figure A3.90 and clarified in Table A3.21.

Table A3.21: Text-image Relations- Sabic

	Image	Text	Relationship
A	Ramadan Kareem; "Ramadan Greeting"	"Ramadan Schedule…Click here…"	Augmentation
B	Open page of a book	"Reading is your real investment"	Enhancement
C	Company's employees	"Job Opportunities"	Augmentation
D	iPad samples	"iPad…iPad Prices…"	Augmentation
E	Sample of products	"Amazing Savings"	Exemplification
F	Laptop	"SUMMER OFERS"	Exemplification
G	POHPNE	"MOTOROLA…"	Augmentation
H	Canon Camera	"Canon…AMAZING OFFER"	Exemplification
I	Bluetooth	"PLANTRONICS-sound sensation"	Exposition
J	Sample of flash memory	"Transcend; future generation of solution for data savings"	Exemplification
K	Several books	"Beneficial summer the fun of reading…"	Augmentation
L	Blur sample	"blur…blur Prices…"	Augmentation
M	Shopping guide booklet	"Shopping Guide"	Exposition
N	Sample of games tool	"GAMING"	Exemplification

A3.8 Summary

This appendix applied the systemic semiotic framework developed in Chapter 4 to 20 Saudi Arabian websites in six business categories (Banking and Insurance, Telecommunications, Food, Transport and Tourism, Energy, and an Other category that consists of an electronics company, a car manufacturer and an office supplier company. A similar set of results for corresponding Australian sites were provided in Appendix 1. Major comparisons and evaluations between Australian and Saudi Arabian websites are described in Chapter 5.

Figure A3.90: Jarir Image-Text analysis for Components (A...N)

Appendix 4

Saudi Arabian Web Pages Field and Tenor Relations

The field (A) and tenor (B) relations evident on selected Saudi Arabian webpages are consolidated into this appendix in order to facilitate direct comparisons within and between different business categories. The field and tenor relations evident on selected Australian webpages can be found in Appendix 2.

A) Field Relations

Key: *Media*: Textual, Image (inferred); *Field Complexity*: Isomorphic/Anisomorphic

#	Category	Section	Figure	Lexical Items	I/A
Banking and Insurance					
1	Alrajhi Bank	A3.2.1	A3.1 (A)	T: Welcoming Activity, I: Business Activity	A
		A3.2.1	A3.1	T and I: Religious Activity and Business Activity	A
2	Samba	A3.2.2	A3.6	T: Business Activity	I
		A3.2.2	A3.11 (A)	T and I: Business Activity for using bank services.	I
3	Alfaransi Bank	A3.2.3	A3.12	(indices, oil metals…), T: Business Activity and financial Activity	A
		A3.2.3	A3.15 (B)	T and I: Business Activity for using bank Credit Cards.	I
4	Alahli Bank	A3.2.4	A3.13	T and I:Religious Activity and Business Activity	A
		A3.2.4	A3.19 (C)	T:Business Activity, I: National Activity	A
5	Tawuniya	A3.2.5	A3.25 (D)	T and I: Business Activity	I
Telecommunications					
6	STC	A3.3.1	A3.16	T and I: Religious Activity and Business Activity	A
		A3.3.1	A3.31 (D)	T and I:Business Activity for i phones	I
		A3.3.1	A3.31 (A)	T: Business Activity, I: Social Activity	A
7	Atheer	A3.3.2	A3.32	T and I: Religious Activity and Business Activity	A
		A3.3.2	A3.35 (D)	T and I: Business Activity for after sales service	I

8	Nesma	A3.3.3	A3.39 (A)	T: Business Activity, I: Social Activity	A
9	AwalNet	A3.3.4	A3.44 (B, C)	T and I:Business Activity	I
10	Naseej	A3.3.5	A3.48 (A)	T and I: Business Activity	I
Food					
11	Almarai	A3.4.1	A3.52 (A)	I: Social Activity and Business Activity	A
		A3.4.1	A3.52 (B)	T: Social Activity, I: Business Activity	A
12	Nadec	A3.4.2	A3.56 (A)	I: Environmental Activity and Business Activity	A
		A3.4.2	A3.56 (C)	T:Financial Activity, I: Business Activity	A
13	Sadafco	A3.4.3	A3.60 (B, C, D)	T and I: Business Activity for different products	I
Transport and Tourism					
14	Saptco	A3.5.1	A3.64 (A)	I: Tourism Activity and Business Activity	A
		A3.5.1	A3.64 (D)	T and I: Business Activity	I
		A3.5.1	A3.64 (C)	T and I: Tourism Activity and Business Activity	A
15	Fursan Travel	A3.5.2	A3.68 (B)	T and I: Tourism Activity and Business Activity	A
Energy					
16	Gasco	A3.6.1	A3.72 (A)	T: Environmental Activity, I: Business Activity	A
		A3.6.1	A3.72 (B)	T and I: Business Activity for promoting products	I
17	Seco	A3.6.2	A3.76 (B)	T: Financial Activity, I: Business Activity	A

#	Company	Section	Figure	Media (Tenor Dimensions)	S/M
Others					
18	AEC	A3.7.1	A3.81 (A)	T: Business Activity, I: Technical Activity	A
		A3.7.1	A3.81 (B)	T and I: Business Activity	I
19	Sabic	A3.7.2	A3.86 (D)	T: Financial Activity, I: Business Activity	A
		A3.7.2	A3.86 (C)	T and I: Business Activity	I
20	Jarir	A3.7.3	A3.90 (A)	T: Business Activity, I: Religious Activity	A

B) Tenor Relations

Key *Media:* Textual, Image (inferred); *Tenor Dimensions*: Contact (Occasional/Frequent); Affective Involvement (Low /High) and Power Relationship (Unequal/Equal); *Tenor Complexity*: Single/Multiple

#	Company	Section	Figure	Media (Tenor Dimensions)	S/M
Banking and Insurance					
1	Alrajhi Bank	A3.2.1	A3.5 (A)	T: Other people (O, L, U) I: Customers (F, L, E)	M
		A3.2.1	A3.1	T: Customers and Muslims (F, H, U)	M
2	Samba	A3.2.2	A3.6	T: Individuals and Business Customers (O, L, U)	S
		A3.2.2	A3.11 (A)	T and I: Customers (O, L, E)	S
3	Alfaransi Bank	A3.2.3	A3.12	T: Customers and other people (O, L, U)	M
		A3.2.3	A3.15 (B)	T and I: Customers (F, L, E)	S
4	Alahli Bank	A3.2.4	A3.13	T and I: Customers and Muslims (F, H, U)	M
		A3.2.4	A3.19 (C)	T:Customers (F, L, E), I: Citizens (F, H, E)	M
5	Tawuniya	A3.2.5	A3.25 (D)	T and I: Customers (F, L, E)	S
Telecommunications					
6	STC	A3.3.1	A3.26	T: Customers (F, L, U), I: Muslims (F, H, U)	M
		A3.3.1	A3.31 (D)	T and I: Smart Phones (iPhone) Customers (F, H, E)	S
		A3.3.1	A3.31 (A)	T: Customers (F, L, U), I: Early married people who are looking for permanent houses (F, L, E)	M
7	Atheer	A3.3.2	A3.32	T and I: Customers and Muslims (F, H, U)	M

		A3.3.2	A3.35 (D)	T and I: Customers (F, L, U)	S
8	Nesma	A3.3.3	A3.39 (A)	T: Customers(F, H, U) , I: Families (F, H, E)	M
9	AwalNet	A3.3.4	A3.44 (B, C)	T and I: Corporate, Small, Medium customers (F, L, U)	S
10	Naseej	A3.3.5	A3.48 (A)	T and I: Clients Customers (F, H, U)	S
	Food				
11	Almarai	A3.4.1	A3.52 (A)	I: Saudi Staff and non-Saudi Staff (O, H, U)	M
		A3.4.1	A3.52 (B)	T and I: Kids and customers (F, H, U)	M
12	Nadec	A3.4.2	A3.56 (A)	I: Customers and Environment people (O, H, U)	M
		A3.4.2	A3.56 (C)	T: Customers (F, H, U), I:Financial people (F, L, U)	M
13	Sadafco	A3.4.3	A3.60	T and I: milk, paste, ice cream' customers (F, H, U)	S
	Transport and Tourism				
14	Saptco	A3.5.1	A3.64 (A)	I: Customers and Other people (F, H, U)	M
		A3.5.1	A3.64 (D)	T and I: Customers (F, L, U)	S
		A3.5.1	A3.64 (C)	T and I: Customers an Other People (F, H, U)	M
15	Fursan Travel	A3.5.2	A3.68 (D)	T and I: Customers an Other People (F, H, U)	M
Energy					
16	Gasco	A3.6.1	A3.72 (A)	T: Environmental people (O, H, U); I: Customers (F, L, U)	M
		A3.6.1	A3.72 (B)	T and I: Customers (F, L, U)	S
17	Seco	A3.6.2	A3.76 (B)	T:Finance people (F, L, U), I: Customers (F, H, U)	M

#	Company	Section	Figure	Media (Tenor Dimensions)	S/M
Others					
18	AEC	A3.7.1	A2.81 (A)	T: Customers(F, L, U) , I: Employees (F, L, E)	M
		A3.7.1	A3.81 (B)	T and I: Trainees (F, L, E)	S
19	Sabic	A3.7.2	A3.86 (D)	T: Financial People (F, L, U), I: Customers (F, H, U)	M
		A3.7.2	A3.86 (C)	T and I: Corporate customers (F, L, U)	S
20	Jarir	A3.7.3	A3.90 (A)	T: Customers (F, L, U), I: Muslims (F, H, U)	M