

**The Dynamics of Alignment:
Resolving Strategy Ambiguity
within Bounded Choices**

Bruce Campbell

University of Technology, Sydney

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Declaration:

I certify that the work in this thesis has not previously been submitted for a degree nor has it been submitted as part of requirements for a degree except as fully acknowledged within the text.

I also certify that the thesis has been written by me. Any help that I have received in my research work and the preparation of the thesis itself has been acknowledged. In addition, I certify that all information sources and literature used are indicated in the thesis.

Bruce Campbell

17th November, 2007

M4. *So what makes up the information system?*

M1. *Business. Process. People. That's the system.*

M4. *So the system is the business, the processes within that business, and the people who operate the processes in that business. That's an information system?*

M1. *Business, process, people. That's it. And that's what you've always got to focus on when you're looking at an IS system.*

M4. *So how can an information system, then, be misaligned with the business?*

(Exchange between two business managers in a focus group held 28th August 2003)

Dedication:

This thesis is dedicated to my father whose last regret was that he would be unable to see its completion.

Acknowledgements:

Firstly, I would like to acknowledge the participants of this research. Without them it would not exist.

I would also like to acknowledge my supervisors. Ken Dovey gave me the space to make my own journey whilst Jim Underwood always questioned my assumptions and beliefs. Both were valuable and appreciated. David Avison acted as a supervisor for most of this thesis but due to circumstances had to relinquish that position towards the end. He taught me more about writing than he realises.

I would also like to thank Walter Fernandez (ANU), Cathy Urquhart (University of Auckland) and Melanie Kan (UTS) who provided support when I got lost in the grounded theory method – an occupational hazard for a “minus mentor” student.

Abstract

Alignment of information systems (IS) with business activities has been an important problem for practitioners for many years even though there has been considerable research in the area. A criticism of some past research into IS/business alignment is that it has ignored organisational complexity and context. This is partly due to the dominant paradigm in use within IS research. One result of this paradigm is that there are numerous prescriptions provided in the literature for improving alignment but little in the way of theory development that explains the behaviour of practitioners when confronted with the task of attaining alignment.

To address these criticisms a grounded theory approach was adopted using a coding family that encouraged the discovery of systems of interaction between variables rather than assuming linear causality. Data was collected via three unstructured focus groups that limited the effect of prior reading of the literature, an important consideration when conducting a grounded theory study. These were followed by semi-structured individual interviews. The instruments for the latter were developed after the focus group interviews were analysed, so reducing the impact of a priori reading.

Analysis of the focus group interviews found that the major concern of practitioners was aligning IS strategies to either business strategies documented in business plans or the business strategies in use. This is a similar result to earlier alignment research. As a result of analysis of the focus group interviews the research question stabilised.

This research investigated how factors within an organisational setting impact the ability of senior IT managers to identify, then act upon, the business strategies in use.

It confirmed many of the enablers and inhibitors to alignment identified in earlier research. However, it also identified two variables that are rarely given prominence in the literature: the mental models held by managers; and the motivation and

measurement schemes applied to managers. It is believed that both these variables have a significant impact on the alignment of IS and business strategies.

The theory developed here demonstrates that a system of variables will tend to encourage IT managers to either collaborate with their business peers, or retreat from the business and concentrate on providing a low cost reliable technical IT solution. In the former situation alignment of IT managers' actions to those of their business peers is encouraged. In the latter situation there will be little alignment between business and IS strategies nor between the actions of business and IT managers.

A feedback loop of actions by actors within the system tends to reinforce the situation making a change in response extremely problematic. This, then, helps explain the intractable nature of alignment that has been observed for many years.

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1 Introduction

1.1 Background to the Research

One of the most pervasive characteristics of messy problems is that people hold entirely different views on (a) whether there is a problem, and if they agree there is, (b) what the problem is. In that sense messy problems are quite intangible and as a result various authors have suggested that there are no 'objective' problems, only situations defined as problems by people (Vennix 1996, p. 13).

During my MSc studies (a research degree completed in 1999 at Macquarie University, Sydney, Australia) I was introduced to systems thinking, specifically system dynamics. This made me address my, at that time naïve and uninformed, beliefs regarding causality and the complexity of social systems. I was also introduced to much of the literature on alignment. This identified both the intellectual and social dimensions of alignment (Reich & Benbasat 1996), a number of theories of alignment (e.g. Henderson & Venkatraman 1993) and many of the enablers and inhibitors to alignment (Luftman & McLean 2004; Teo & Ang 1999). But, as Chan (2002) laments in her investigation of CIO's of organisations that reputedly had a high degree of alignment we still have not mastered alignment. To compound the issues, there is still some disagreement whether alignment is an end state or a process with some researchers appearing to change their attitudes over time (Chan 2002; Chan et al. 1997). The literature indicates, however, that the level of alignment can, and does, change over time as circumstances and constituencies change often as a result of a crisis or organisational transformation. This literature also identifies many of the triggers of alignment. But it shows little understanding of the social processes that allows one organisation to maintain a high level of alignment after its development during a crisis whilst another organisation reverts to its prior low level of alignment (Sabherwal, Hirschheim & Goles 2003).

In general the literature provided little insight into why some organisations appeared able to achieve a reasonable level of alignment, and presumably effective use of their IT, and others did not.

A personal frustration during this introduction to the alignment literature was that much of it:

1. is prescriptive based on deductive theories (for example that we increase the level of integration during the development of strategic business and IS plans (King & Teo 2000)),
2. creates lists of factors either enabling or inhibiting alignment with no regard to their interaction (Luftman, Papp & Brier 1999; Teo & Ang 1999), or
3. severely limits the number of variables included in a study in an effort to establish a linear causal relationship between a very limited remainder (Nelson & Coopriider 1996).

The bullet points above tend to be at odds with the quote from Vennix (1996, above) and counter to my personal beliefs of how a social system works. My natural inclination is to look at the “big picture” and interactions rather than delve into the detail surrounding a very few factors that may affect the overall problem situation. It has also been argued that any variable known to influence a system should be included in a model. Not doing so assumes its value is zero, the only value we know it can not have (Forrester 1961, p. 57). Forrester proceeds to argue that, in a quantitative model, any estimate for the value of a “soft” variable is likely to be better than ignoring it because it cannot be measured precisely. It appeared to me that much of the existing alignment research did, indeed, ignore many variables in its quest for rigour.

The type of research just described is consistent with a positivist research paradigm which has been identified as being dominant in IS research. Orlikowski and Baroudi (1991, p. 7) argue that:

“An exclusive view is, in our opinion, always only a partial view, and the dominance of positivism, by not acknowledging the legitimacy of

other research traditions, has limited what aspects of information systems phenomena we have studied, and how we have studied them. This has implications not only for the development of theory and our understanding of information systems phenomena, but also for the practice of information systems work”.

Regardless of the number of enablers and inhibitors to alignment that had already been identified I was still not convinced that the list was exhaustive. I had noticed that the vast majority of alignment research had concentrated its investigation at the CEO/CIO level. This is probably due to the definitions of alignment that are typically provided. Most of these emphasize actions at the executive level and ignore implementation at the lower levels of an organisation.

Research based on systems thinking indicates that most causal relationships within social systems tend to be recursive (Sterman 2000, Chptr 5). This reflects the argument being made by Ciborra (1997) in his critique of existing alignment research which he says mostly ignores context and the complexities of organisational environments in its desire to develop simple, prescriptive models. This is probably why, according to Chan (2002), we still haven't mastered alignment. Any research that can encompass this complexity is therefore likely to increase our understanding of alignment. It is also likely to uncover additional enablers and inhibitors to alignment that have not so far been considered in any significant way.

Succinctly, earlier alignment research had identified many enablers and inhibitors to alignment, indicated some causal relationships and had developed some deductive theories on how to improve alignment. But, a literature review indicated that there appeared to be few, if any, substantive mid-level theories based on empirical evidence within the area of IS/business alignment that attempted “... *to discover what is going on, rather than assuming what should go on*” (Glaser 1978, p. 159). Earlier research has not shown **why** alignment has been such an intractable problem for so many organisations for so many years. This is possibly a result of excluding both the complexity of alignment and its context by severely limiting the variables being considered. Emphasis has been placed on identifying levers to improve alignment rather than attempting to understand the limitations being imposed on those levers.

This, then, provided the motivation for this research - to identify any new enablers and inhibitors to alignment and, if possible, to develop a substantive theory based on empirical evidence that adequately describes the interaction of many of these factors. By doing this the intent was to:

Understand why some organisations are able to achieve a satisfactory level of IS/business alignment whilst others cannot.

1.2 Significance of the Research

In addressing the issues outlined above and the general research problem the research reported here, unlike most previous alignment research, adopted a systems perspective. This ensured that the complexity of the alignment problem was captured. Additionally a systems approach, by definition, must include context as this affects the problem being studied. This, then, immediately overcomes the limitations of much previous research into alignment.

The research presented here contributes to our knowledge by:

- Offering a well founded theory that explains **why** IS and business alignment has been such an intractable problem for many years.

The theory is relevant to both researchers and practitioners.

- Demonstrating that the decisions and actions of all managers are bound by organisational factors. This is contrary to much of the earlier research that assumes that managers operate freely and can readily change their behaviour.
- Clearly demonstrating that business alignment has a significant impact on strategic alignment. This highlights the need to consider all of the types of alignment identified by Henderson & Venkatraman (1993), not just strategic alignment.
- Showing that there are two aspects to strategic alignment – strategy development and, then, implementation.

It has been implicitly assumed in the literature that achieving alignment is a simple matter of closely integrating the development of business and IT strategic plans (see, for example, King & Teo 2000). The implementation of

strategies is almost totally ignored even though Henderson and Venkatraman (1993) indicate that both are of equal importance.

- Identifying the mental models of managers, and the motivation and measurement schemes in use within an organisation as additional factors affecting alignment. These are rarely mentioned in the literature when identifying the enablers and inhibitors to alignment (see, for example, Luftman & McLean 2004).

It appears that an attitude similar to that espoused by Carr (2005), that IT is a commodity, will inevitably lead to a situation where the IT function is considered a cost centre, is required to only provide a basic IT service and has low status. This may be appropriate for some businesses in some industries. It is not appropriate if senior management hopes to use its IT to gain competitive advantage.

The motivation and measurement schemes in use will impact the implementation of both business and IT strategies. Managers will always react to the way they are measured, rather than those aspirations identified in plans.

- Indicating that alignment is a complex social problem.

It is unlikely that a single lever to improve alignment will be identified. Rather, improving alignment is more likely to be associated with all managers understanding how their cognition and actions limit future actions. In this respect, improving alignment is likely to be closely associated with personal mastery (Senge 1990) and organisational learning (Argyris 2003).

1.3 Research Method

Given the above, any research method chosen to address the general research question had to be able to:

- Develop a theory, from evidence, of how organisations attain alignment (or, conversely, why they find it difficult to attain a satisfactory level of alignment)
- Be inclusive of variables (enablers and inhibitors) rather than exclusive
- Understand the social process of alignment

- Embrace the complexity and context of alignment
- Accommodate a systems perspective to data analysis.

The goal of the research was to develop a theoretical model that could explain the actions of practitioners as they attempt to attain alignment. That is, I wanted to investigate the social process of alignment. As part of this the model should account for actions of business and IT managers from various levels of the organisation.

Therefore the scope was quite broad and was in line with my own preference to look at the “big picture.” The goal was not to investigate specific tasks, such as the development of plans, of practitioners.

The research method chosen for this study was grounded theory. It is primarily an inductive method that aims to develop a mid-level theory of a phenomenon from data that has been systematically collected and analysed (Glaser & Strauss 1999, p. 1). The aim was to build, not test, theory. Rather than starting with preconceived ideas and/or hypotheses the researcher starts with a general area of study and allows the theory to emerge from the data. This emergence of a theory from data often means that the general research problem is modified and refined as data collection and analysis continue. This was the case with this research.

Data was collected primarily by interview. This was initially by unstructured focus groups (Morgan, D.L. 1997, pp. 39-42) and then followed up by individual interviews (Fontana & Frey 2000).

The participants of the three focus groups were given instructions on how to manage their session. They were then asked two questions:

- What do you understand by the term “alignment” and;
- What are the enablers and inhibitors to alignment?

I took little active part in these focus groups so reducing my influence on topics that were discussed (Berg 1998, p. 104). The recording of each focus group was transcribed and then analysed using the interactive coding family (Glaser 1978). This coding family, unlike most others identified by Glaser, accommodates a systems perspective. The analysis then informed the instruments developed for the individual interviews.

The analysis of these focus groups further reduced the scope of this research and refined the general research question. Chan (2002) discovered that the major concern of her participants was the alignment of business and IT strategies. My participants confirmed this concern. They virtually ignored all the other types of alignment identified by Henderson and Venkatraman (1993). The participants of these focus groups also highlighted the difference between formal strategies documented in plans and those they could see being implemented by business managers. This, again, was related to strategic alignment. As strategic alignment was the major concern of these subjects the general research question was refined to become:

How do factors within an organisational setting impact the ability of senior IT managers to identify, then act upon, the business strategies in use?

There are a number of implicit assumptions within this question. Firstly, most other alignment research has assumed that strategies that are developed at the executive management level will be implemented as written. This research makes no such assumption.

Secondly, the research question implies that there are factors that limit an IT managers ability to identify the strategies in use, and then to act accordingly. This research therefore limited its investigation into identifying reasons why an IT manager has difficulty understanding the strategies in use, and then taking action.

1.4 Limitations of the Research

There are three major limitations to this research.

Firstly, there was a very small number of subjects. This could be seen as limiting the generalisability of the findings. However, in accordance with the grounded theory method, data collection continued until saturation was reached. That is, until I did not have any unanswered “holes” left in the theory. Further data collection and analysis would most likely have led to a greatly increased work for very little return.

Additionally, Glaser (1998) argues that providing a substantive theory is robust any future data can be used to modify the theory without altering its underlying structure. I believe that I have provided the evidence to support the robustness of the theory, and

that it will accommodate future data. In particular, future research may provide further characteristics of the two responses to strategy ambiguity identified in the theory. I believe, therefore, that the theory is generalisable to most/all organisations and will allow managers to understand why alignment is so difficult to achieve.

Secondly, the theory presented in this dissertation is my interpretation of the data. I came to that interpretation holding numerous assumptions (for example, that social systems cannot be understood using linear causality) and beliefs. These will have influenced my interpretation. Therefore, another person interpreting the same data may come to a different conclusion. However, the theory developed here is robust within the context of my assumptions and beliefs.

Thirdly, although a systems perspective has been used to interpret data no attempt has been made to either measure the value of variables, nor to attribute causality between variables. Subjects indicated that one variable had an influence on another. They did not say that it caused the other. Additionally, it is not possible to positively identify those variables that have the most impact on the behaviour of the system and are, therefore, primary candidates for attention to improve alignment. The lines of influence shown between variables could be used to develop hypotheses by future researchers. These could then be tested for the strength of causality using more quantitative methods. However, this will still not identify those variables with most influence on overall system behaviour. Only the development of a quantitative simulation model that includes all the variables identified in the research reported here is likely assist in this regard.

1.5 Associated Work and Publications

Data for this research was initially collected via three unstructured focus groups. The first of these was conducted as an exploratory study with an associate, Prof. David Avison of ESSEC, France, who was also one of my supervisors. My three supervisors then recommended that the data from this initial, exploratory, focus group be incorporated into this thesis. The two questions posed to this focus group were the same as those given to the other two focus groups. However, it had an additional element.

As well as the semi-structured discussion of the two research questions the members of the first focus group were then invited to participate in three group sessions to develop a causal-loop model (Vennix 1996; Sterman 2000) of IS and business alignment. This model was reported in two papers:

Campbell, B.R., Kay, R. & Avison, D.E. 2004, 'Strategic Alignment: A Practitioner's Perspective', paper presented to European & Mediterranean Conference on Information Systems, Tunis, 25-27 July.

---- 2005, 'Strategic alignment: a practitioner's perspective', *Journal of Enterprise Information Management*, vol. 18, no. 6, pp. 653-64.

The latter received a Highly Commended award from the editors of the journal.

Other papers have also been published as a result of this research. These include:

Campbell, B.R. 2003, 'The Role of Trust in IS/Business Alignment', paper presented to 7th Pacific Asia Conference on Information Systems, Adelaide, Australia, 11-13 July, 2003.

---- 2004, 'The Effect of Emergent Strategies on Alignment', paper presented to The Eighth Pacific Asia Conference on Information Systems, Shanghai.

---- 2005, 'Alignment: Resolving Ambiguity within Bounded Choices', paper presented to 9th Pacific Asia Conference on Information Systems, Bangkok, Thailand, 7-11 July 2005.

---- 2007, 'Strategic Alignment: A Dynamic Process', paper presented to 18th Australasian Conference on Information Systems, Toowoomba, 5-7 December, 2007.

These latter papers reported either my understanding of issues surrounding alignment that have been documented in earlier literature, or the gradual development of the theory that is presented in this thesis. As such they indicate a growing understanding of the alignment problem.

1.6 Structure of the Thesis

The next chapter, the Literature Review defines terms used within the thesis, including alignment; reviews existing literature on alignment including its measurement; and identifies the enablers and inhibitors to alignment as discussed in the literature. It was not possible to stay within a single disciplinary area during the investigation. This is quite normal for a grounded theory study. Hence theories from other disciplines, including social capital theory, are discussed.

The third chapter on the Research Paradigm investigates the choices of paradigm that could be used to investigate a problem such as alignment. However, as detailed in that chapter, as a constructionist I believe that I do not have a choice of paradigm – I am restricted in my choice according to my own epistemological and ontological beliefs.

Chapter Four introduces the research method. As grounded theory is not normally used in either IS or alignment research some time is spent discussing the methodology and some of its criteria and conundrums. One of these is the conflict between the methodology's recommendation, and that of students' supervisors, regarding the timing of immersion in the literature. This was resolved by initially conducting unstructured focus groups to guide further data collection. As I have not come across this tactic in my reading of the literature I spend some time explaining how, and why, I did this.

In Chapter Five I identify the core problem of participants. According to the grounded theory methodology this is **the** issue faced by participants within the research problem area. For my participants it was the ambiguity surrounding the difference between espoused business strategies and those being implemented. Participants indicated that the strategies most likely to be implemented within a business have certain characteristics. This, then, means that many business strategies are either modified, or even ignored, during implementation. The chapter then finishes with a description of how the theory presented in this research developed during the course of the research as my understanding of the problem situation improved. This provides the background for further discussion of the specifics of the theory.

The final theory indicates that the dynamic interaction of a sub-group of variables limit the decisions and actions that a manager can take. These variables could be

either due to factors pertinent to the particular manager, or could be a result of organisational pressures. I have therefore called this sub-group of variables the Locus of Control which is described in Chapter Six.

Chapter Seven introduces another sub-group of variables that limit a manager's comprehension of a complex issue, in this case the core problem of participants – the difference between espoused and enacted strategies. Again, these factors could be part of a manager's being, or a result of organisational factors and pressures. This sub-group of variables have been termed the locus of comprehension.

Chapter 8 then describes the two typical reactions of IT managers when they are faced with strategy ambiguity. They can either attempt to collaborate with their business peers or concentrate on providing a low-cost, reliable IT service whilst minimising interaction with business peers. The dynamic interaction between variables within the locus of control and locus of comprehension normally dictates which of the two responses is possible. That is, the choice of response is often not voluntary on the part of the IT manager. Finally, this chapter discusses the theory that has been developed in relation to earlier alignment research and other general theories. It is shown that the theory developed here has similarities to other general theories such as dynamic capabilities (based on the resource theory of the firm), co-evolutionary theory and structuration theory.

The final chapter, 9, provides a conclusion reiterating the contribution and implications of this research to theory and practice. It argues that the dominant research paradigm in use may not be overly helpful in understanding the complexities of alignment, hence the intractable nature of the problem. Finally, it identifies a path for future alignment research that may yield some results.

2 Literature Review

2.1 Abstract

This chapter firstly defines various terms used in alignment research. It then investigates various definitions of alignment arguing that alignment should be considered a process rather than an end state.

The chapter continues with a review of some of the literature on the development of alignment. The major argument presented is that most prior research has assumed linear causality and that this has led to a situation where it is difficult to resolve conflicts between various pieces of research. An investigation into alignment that does not assume linear causality may be able to resolve some of these conflicts.

A result of the difficulty in explicitly defining alignment is that suitable methods of measuring alignment have also not been agreed. A number of alternative measurements are discussed, but none of them are particularly satisfactory. Of these, the most comprehensive is probably Luftman's strategic alignment maturity model but even this does not provide an unequivocal measurement for the level of alignment. This is not surprising given the earlier argument that alignment should be considered a process rather than an end state.

The chapter concludes with an extensive discussion of the enablers and inhibitors to alignment identified in the literature. It is argued that as many of these are social in nature that it may be worthwhile considering alignment from a social capital perspective.

2.2 Introduction

This research used the grounded theory method (see, for example, Glaser & Strauss 1999, p. 27) to investigate IS/business alignment. The rationale for choosing this method will be provided in the next chapter. One of the recommendations given by the originators of the method is that an extensive literature review of the substantive area under investigation should not be undertaken prior to data collection and analysis

(Glaser 1998, p. 67) as this may bias induction of theory from the collected data. Additionally, grounded theory "... *generates hypotheses from data and in no way tests theories found in other literature*" (ibid. p. 68). Other authors have indicated that the recommendation not to conduct a literature review prior to a grounded theory study is not practical for students, including PhD students, who are constrained by the requirements of their supervisors and examiners and the need to develop a reasonably focussed research question (Urquhart & Fernandez 2006, p. 461).

Initially an extensive, rather than focussed, reading of those areas thought to be relevant to this study occurred prior to data collection and analysis. As I was not aware of where my data may take me in the development of a grounded theory my reading included literature within the alignment, business strategy, social capital and organisational trust domains. Most of these domains are external to the substantive area being investigated (alignment of IT to the business) and this type of reading during data collection and analysis is encouraged by the originators of grounded theory as it increases the sensitivity of the researcher to potential theories within his or her data. This is known as theoretical sensitivity (Glaser 1998, pp. 73-74).

Unstructured focus groups were then used to limit the effect of this reading during initial data collection and analysis. The participants of these sessions restricted discussion to a single problem area of alignment. This, then, provided the focus for further data collection and analysis.

The literature review presented here was written after data collection, analysis and the development of the grounded theory had been completed. It is not extensive but provides a background for the remaining chapters, highlighting issues within the literature which the emergent grounded theory helps illuminate. Additional literature is introduced in later chapters where the development of the emergent theory is described. This is common in grounded theory studies where the emergent theory is either compared to earlier research or it can help explain earlier research results. In the former case relevant literature is another form of data that can be used in the development of the theory and to add to its robustness (Glaser 1998, p. 76).

The first conundrum encountered in the literature was the plethora of terms and definitions used within alignment literature. This is addressed in the next section.

2.3 Definitions and Terms

One of the major problems new researchers into IS/Business alignment encounter is the plethora of terms, definitions and concepts for alignment (Chan et al. 1997). This section uses a model based on an earlier, well respected, model to explore some of the contradictions in terms.

The following model, from Sabherwal, Hirschheim & Goles. (2003, p. 314), is a modification of the original by Henderson and Venkatraman (1993). It has been simplified in some aspects but still embodies most of the concepts of the original whilst adding other information. The description of IS strategy and IS structures shown in Figure 2.1 necessarily hides much of the richness of concept of Henderson & Venkatraman (1993, pp. 474-475).

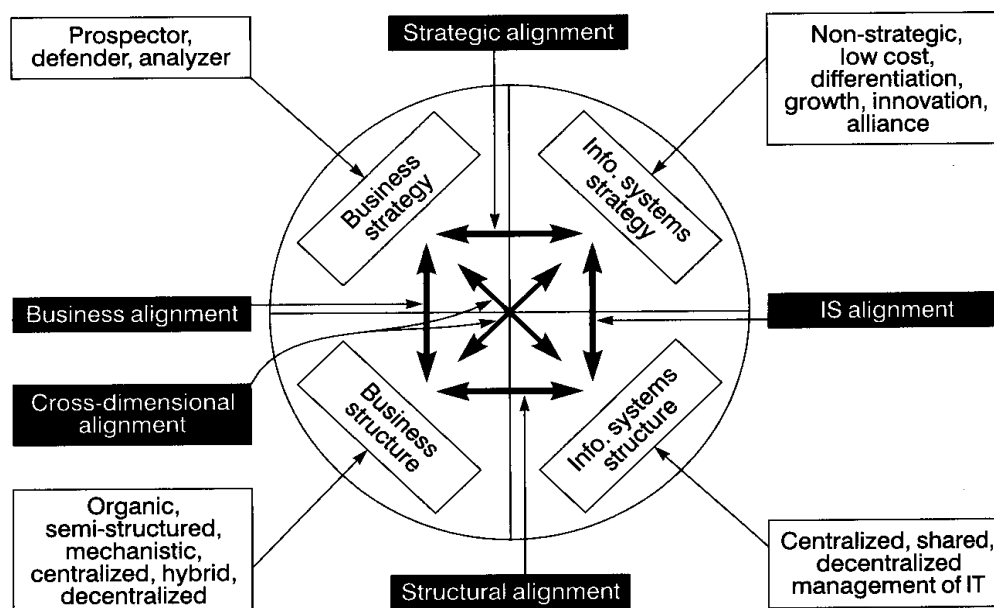


Figure 2.1. A model of IS/Business Alignment. From Sabherwal, Hirschheim & Goles, 2003

The main area of difference is in the use of terms. Henderson and Venkatraman (1993) speak only of strategic alignment but used the terms Strategic Fit and Functional Integration to indicate alignment along the vertical and horizontal axes and which they refer to as the “dimensions of alignment”. Sabherwal, Hirschheim & Goles (2003) break these dimensions down into four “types of alignment”: Strategic

alignment (alignment of business and IS strategic plans); Structural alignment (alignment of the structures of the business and IS functions); Business alignment (development of the business structure so that the business strategies can be achieved) and; Information Systems alignment (development of an appropriate IT functional structure so that the IS strategic plans can be implemented). These types of alignment are shown in Figure 2.1 by the black text boxes. This terminology is consistent with some other's use of the terms (Sabherwal, Hirschheim & Goles 2003) but is by no means universal. Chan (2001) uses the same terms when describing the types of alignment in a paper published at the same time as the original publication of Sabherwal, Hirschheim & Goles (2003) however neither of the papers references the other.

To confuse matters more, the paper of Sabherwal et al. (2003) refers to the four areas requiring strategic decision making (Business strategy, Business structure, Information system strategy, Information system structure) as the “dimensions of alignment” whilst Reich and Benbasat (2000) refer to the “intellectual” and “social” dimensions of alignment. According to these authors these terms refer to alignment as either the development of plans in formal planning sessions, or a social phenomenon requiring the collaboration of personnel from various functional areas to achieve common business goals.

To remain consistent, the following terms and definitions will be used throughout this document:

Domain of Alignment: refers to those business aspects on which decisions affecting alignment can occur. These are: Business Strategy, Business Structure, Information Systems Strategy and Information Systems Structure. They are represented in Figure 2.1 by the rectangles within the circle.

Alignment: refers to any facet of IS/business alignment. That is, it is used holistically and includes all the types of alignment, below, that involve interactions between the domains of alignment, above.

Type of Alignment: will refer to the types of alignment defined by

Sabherwal, Hirschheim & Goles (2003) and shown by the bold arrows in Figure 2.1.

These are:

Strategic Alignment which refers to alignment between Business Strategy and Information Systems Strategy domains;

IS Alignment referring to the design and choice of the IT function structure and processes to support the implementation of IT strategies;

Structural Alignment which refers to alignment between Business Structure and Information Systems Structure domains and;

Business Alignment referring to the design and choice of business structure and processes to support the implementation of business strategies.

There are two other possible types of alignment referred to as **Cross-Domain Alignment**. These are between the Information Systems Strategy and Business Structure domains, and between the Business Strategy and Information Systems Structure domains.

Strategic Fit refers to either Business alignment or IS alignment. This term retains the original definition of (Henderson & Venkatraman 1993).

Functional Integration refers to either Strategic alignment or Structural alignment. Again, it retains the original definition of (Henderson & Venkatraman 1993).

Dimension of Alignment: refers to whether an intellectual or social view is being considered (Reich & Benbasat 2000). This perspective is not included in Figure 2.1.

2.3.1 What is Alignment?

Henderson & Venkatraman (1993), like many other authors (see, for example, the argument of Maes et al. 2000), did not provide an overall definition for alignment but appear to use the term “strategic alignment” to include the four types of alignment defined, above. They also use the notion of “fit” between the technology and the organisation. This notion has been borrowed from strategic management research and is concerned with the “... *fit between an organisation and its strategy, structure, processes, technology and environment*” (Kanellis, Lycett & Paul 1999, p. 66). Other authors have attempted to define alignment differently. These include:

The degree to which the information technology mission, objectives and plans support and are supported by the business mission, objectives and plans (Reich & Benbasat 1996, p. 56);

Applying Information Technology (IT) in an appropriate and timely way, in harmony with business strategies, goals and needs (Luftman 2000, p. 2);

Aligning the relationship between the business and IT infrastructure domain in order to take advantage of IT opportunities and capabilities (Reich & Benbasat 2000, p. 82).

There are a number of implicit assumptions within these definitions. Firstly, they tend to assume that a set of business strategies exist within a business plan and that these strategies will actually be implemented as planned. Alignment is then a matter of ensuring that an appropriate set of IT strategies that support business strategies and plans are developed and implemented. Once this has been achieved it is assumed that alignment exists. That is, a second assumption is that alignment is an idealised end-state. Similarly, it is assumed that both the business and IT structures can be aligned to assist an end-state of alignment. For example, Henderson & Venkatraman (1993, pp. 472-473) assume that strategy implementation is simply the design and implementation of appropriate formal business and IT administrative structures. Although this is the predominant view within the literature there is an increasing belief that alignment is not necessarily an end-state but a dynamic process (Chan 2002; Ciborra 1997; Maes et al. 2000). The confusion over this very basic concept is highlighted by some authors changing their view over time (Chan 2002; Chan et al. 1997). Because most alignment literature assumes that alignment is an end-state little research has investigated the dynamics of the alignment process (Maes et al. 2000).

The business strategy literature now accepts that strategies are rarely implemented as planned (see, for example, Mintzberg 1988). They continually evolve to reflect changes in the environment, organisational policies and understanding. This then

implies that alignment is a dynamic process that must evolve to cope with these changes – a view at odds with the definitions given above ¹.

In resolving these, and other, issues of alignment Benbya & McKelvey (2006) provided a different definition of alignment. Based on their analysis of the literature they suggest that alignment:

“... is a continuous coevolutionary process that reconciles top-down ‘rational designs’ and bottom-up ‘emergent processes’ of consciously and coherently interrelating all components of the Business/IS relationship at three levels of analysis (strategic, operational and individual) in order to contribute to an organisation’s performance over time” (p. 287).

This particular definition of alignment addresses many, but not all, of the criticisms of alignment definitions raised by Maes et al. (2000). It reinforces their argument that an unequivocal definition of alignment is both needed and problematic. As will be seen, it is the definition that most closely matches the data collected during this project and is therefore adopted as the definition of alignment.

2.3.2 The Development of Alignment

Benbya & McKelvey (2006) as well as some earlier researchers, including Henderson & Venkatraman (1993) and Baets (1992), state that alignment is a dynamic process, not an end state. However many researchers appear to assume that the dynamic nature of the process is due to changes in the external environment such as changes in the industry, actions of competitors or changes to government requirements. Few of them indicate that the dynamics of alignment may be due to endogenous factors – factors within the organisation itself. An assumption of system dynamics is that the behaviour of a system is most often due to its internal structure, and not to exogenous variables (Sterman 2000, p. 95). According to this view any external environmental factor that is believed to affect the behaviour of alignment should be included within the research

¹ For a more complete discussion of these, and other, issues see Benbya, H. & McKelvey, B. 2006, 'Using coevolutionary and complexity theories to improve IS alignment: a multi-level approach', *Journal of Information Technology*, vol. 21, pp. 284-98.

model. However it appears that few, if any, prior research models have explicitly done this.

Research into the social dimension of alignment assumes that those factors affecting the dynamics of alignment are endogenous (Reich & Benbasat 2000). But this then raises another anomaly. The majority of IS research has used a positivist paradigm (Ridley & Keen 1998) that uses an assumption of linear causality between variables. When investigating the social dimension of alignment Reich & Benbasat (2000) developed a research model from earlier literature and shown at Figure 2.2.

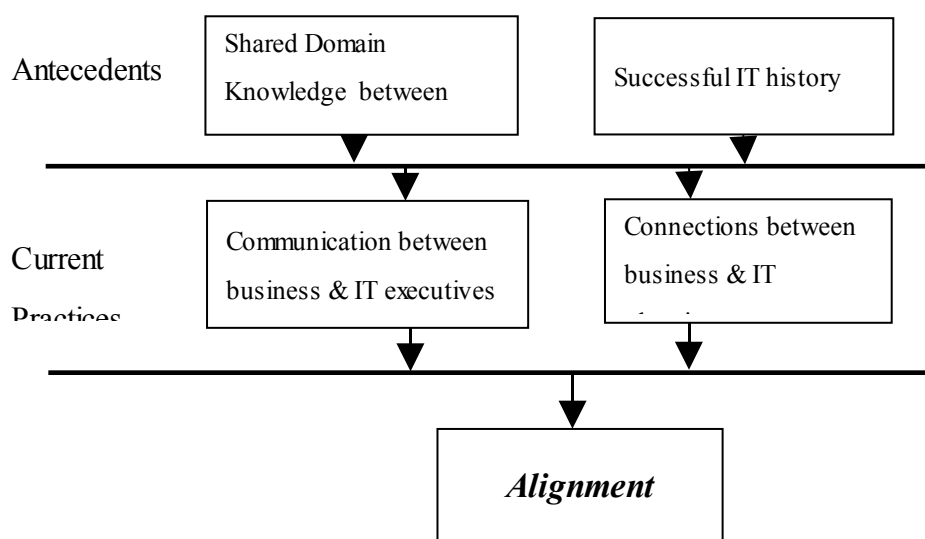


Figure 2.2. The research model of the social dimension of alignment developed by Reich & Benbasat (2000).

This model assumes a linear causality between variables and this is acknowledged by the authors. However, they also acknowledged that the connection between these variables may actually be recursive but did not investigate this possibility. We can only assume that this is because: (a) the prior research on which they based their model also assumed strict linear causality or; (b) they were not prepared to challenge the assumptions of the dominant paradigm in use within IS research.

Using existing literature it can also be argued that the model in Figure 2.2 may not be particularly accurate simply because it is unable to resolve many earlier, conflicting models of causality. This line of argument was adopted by Campbell et al. (2005) who overlaid the research models of Reich & Benbasat (2000) and Nelson & Cooperider (1996) and then compared the result with the trust and social capital literature.

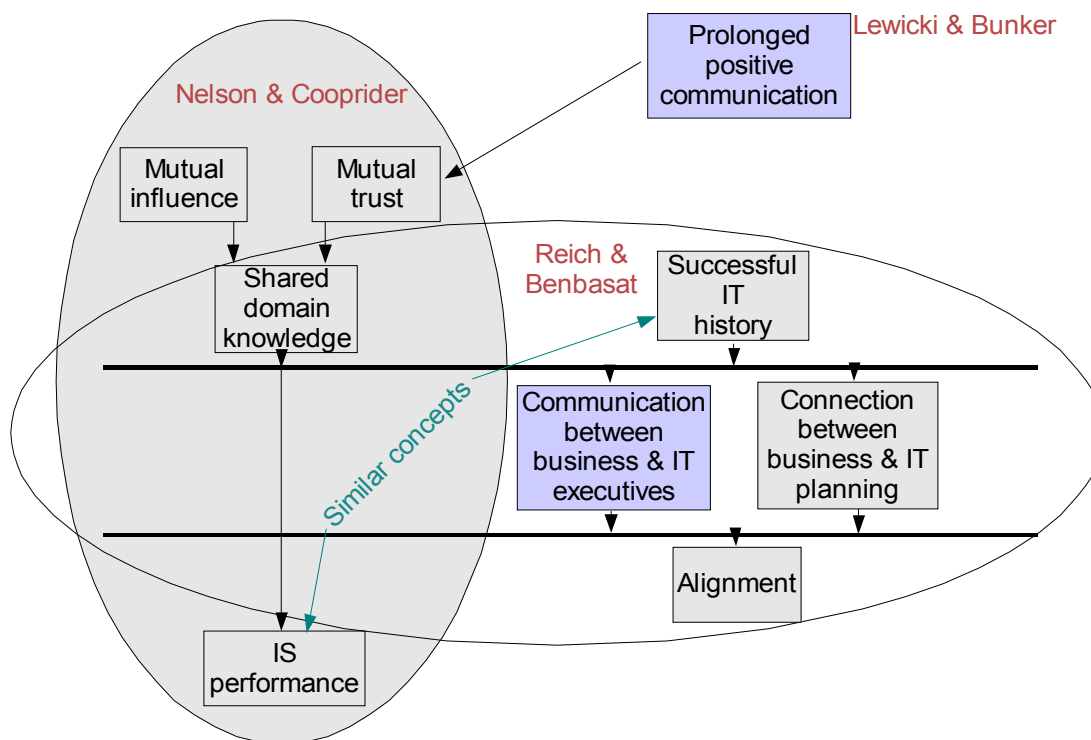


Figure 2.3. Some anomalies in prior IS literature detected by Campbell, Kay & Avison (2005)

The grey oval in Figure 2.3 shows the research model of Nelson & Coopriider (1996) whilst the clear oval encloses the research model of Reich & Benbasat (2000). The former indicates that shared domain knowledge is a prerequisite to IS performance. But the model that Reich & Benbasat developed from the IS literature indicates that both shared domain knowledge and successful IT history lead, eventually, to improved alignment. The anomaly here is that IS performance and successful IT history are similar concepts. How, then, can shared domain knowledge lead to IS performance but also be a co-requisite with IS performance in the development of alignment?

Both of these models were then compared to theories generally accepted in the trust literature (Lewicki & Bunker 1996). These indicate that prolonged positive communication between two parties is a pre-requisite to the formation of trust. But, the combined models of Nelson & Coopriider (1996) and Reich & Benbasat (2000), developed from the IS literature, would indicate that there is a belief within the IS community that trust is a pre-requisite to communication. Two other issues can then be raised.

Firstly, the trust literature indicates that prolonged positive communication is a pre-requisite to the formation of trust. But, once a degree of trust is formed it then enhances the likelihood of further positive communication (Lewicki & Bunker 1996) forming a reinforcing (or positive) feedback loop (Sterman 2000, p. 13). This situation is not reflected in the linear causal models generally adopted within the IS discipline.

Secondly, it appears that IT practitioners also believe that trust is a pre-requisite to communication (Bashein & Markus 1997) and that the current IS literature just reflects this belief. The IT practitioners surveyed by Bashien & Markus (1997) believe that their credibility, or trust, was dependent on their technical expertise whilst business managers believe that their IT managers' credibility was a result of their trustworthiness and that this was built on communication and shared understanding. This uncovers two opposing sets of mental models (Senge 1990) in use by IT and business managers.

The beliefs expressed above also become apparent in other research. For example, Teo & King (1996) in assessing the impact of integrating business and IS planning hypothesized that a high degree of integration of business and IT planning may facilitate communication between business and IT executives (p. 318). Assuming that the theories within the trust literature are correct it could also be hypothesized that business and IT managers are unlikely to work together in a mutual planning process until communication and trust have been established. Another feedback loop, or in the terms of Reich & Benbasat (2000) a recursive relationship, appears to be operating here.

The above has given a very brief introduction to the difficulties in conceptualising, defining and encouraging alignment. It appears that a reason for these difficulties is the historical use of a single epistemological paradigm that encourages the use of linear causality to model relationships between variables. It has been briefly shown, in just one particular instance, that this can cause anomalies and confusion when attempting to reconcile different pieces of research. This research therefore adopted a different research paradigm with an objective of reconciling some of the anomalies.

2.3.3 Measuring Alignment

The difficulties in defining alignment have also meant that it has been difficult measuring alignment (Maes et al. 2000). It has always been assumed that an improvement in alignment will lead to an improvement in organisational performance, but I have been unable to detect any research that conclusively demonstrates this. One of the reasons for this lack is the number of confounding variables that dilute the effect of any linear causal relationship between alignment and business performance (Brynjolfsson & Yang 1996; Stratopoulos & Dehning 2000). Surrogate measures for alignment are therefore used. The most popular of these appears to be the level of integration between business and IT strategic planning (see, for example, King & Teo 2000; Teo & King 1997). This line of research has called for improvement in formal planning methods (Lederer & Sethi 1988).

Counter to the argument for improvements in formal planning methods is the work of Earl (1993) who found that an informal planning process based on communication, trust, mutual understanding and learning between business and IT executives provided the best results. There was an implicit understanding by the practitioners of this approach that they worked in a dynamic environment and that planning was a learning process, not a document. Conversely, Earl found that some formal planning approaches (the Administrative approach) may lead to a high level of implementation but at the expense of alignment and organisational performance. This highlights the problem of attempting to measure alignment using a single criteria and has led to an increasing adoption of methods that interpret a range of criteria to gain an appreciation of the level of alignment within an organisation (Kanellis, Lycett & Paul 1999, p. 65).

Other researchers have used the strategic alignment model (SAM) developed by Henderson & Venkatraman (1993) to measure alignment (see, for example, Avison et al. 2004) whilst Luftman (2001) developed a construct similar to the capability maturity model used in assessing software developer organisations and which he has called the Strategic Alignment Maturity Model. This model is worth investigating in more detail as it acknowledges the social/organisational aspects of alignment.

2.3.3.1 The Strategic Alignment Maturity Model

Luftman's (2001) model uses five criteria against which organisations are assessed. These are: communications; competency/value measurements; governance; partnership; scope & architecture and; skills. Assessment then provides five levels of strategic alignment maturity. These are shown in Figure 2.4, below.

The strategic alignment maturity model developed by Luftman (2001) indicates that alignment is not just about planning, or in Luftman's term 'governance'. According to this model many of the criteria upon which alignment is measured appear to be social in nature. For example, it could be argued that many of the items within the criteria of communications, partnership and skills (and shown in Figure 2.5) are either soft skills or dependent on the organisational social environment.

Although Luftman provides a reasonably comprehensive set of criteria for measuring alignment maturity he does not provide as much detail to enable organisations to improve their maturity. According to Luftman (2001):

The approach applied to attain and sustain business-IT alignment focuses on understanding the alignment maturity, and maximizing alignment enablers and minimizing inhibitors. The process uses the following six steps:

- *Set the goals and establish a team*
- *Understand the business-IT linkage*
- *Analyze and prioritize gaps*
- *Specify the actions (project management)*
- *Choose and evaluate success criteria*
- *Sustain alignment (p. 131).*

Luftman (2001) did not elaborate these six steps to any degree leaving practitioners, and researchers, with little guidance on how to enhance his six criteria of alignment.

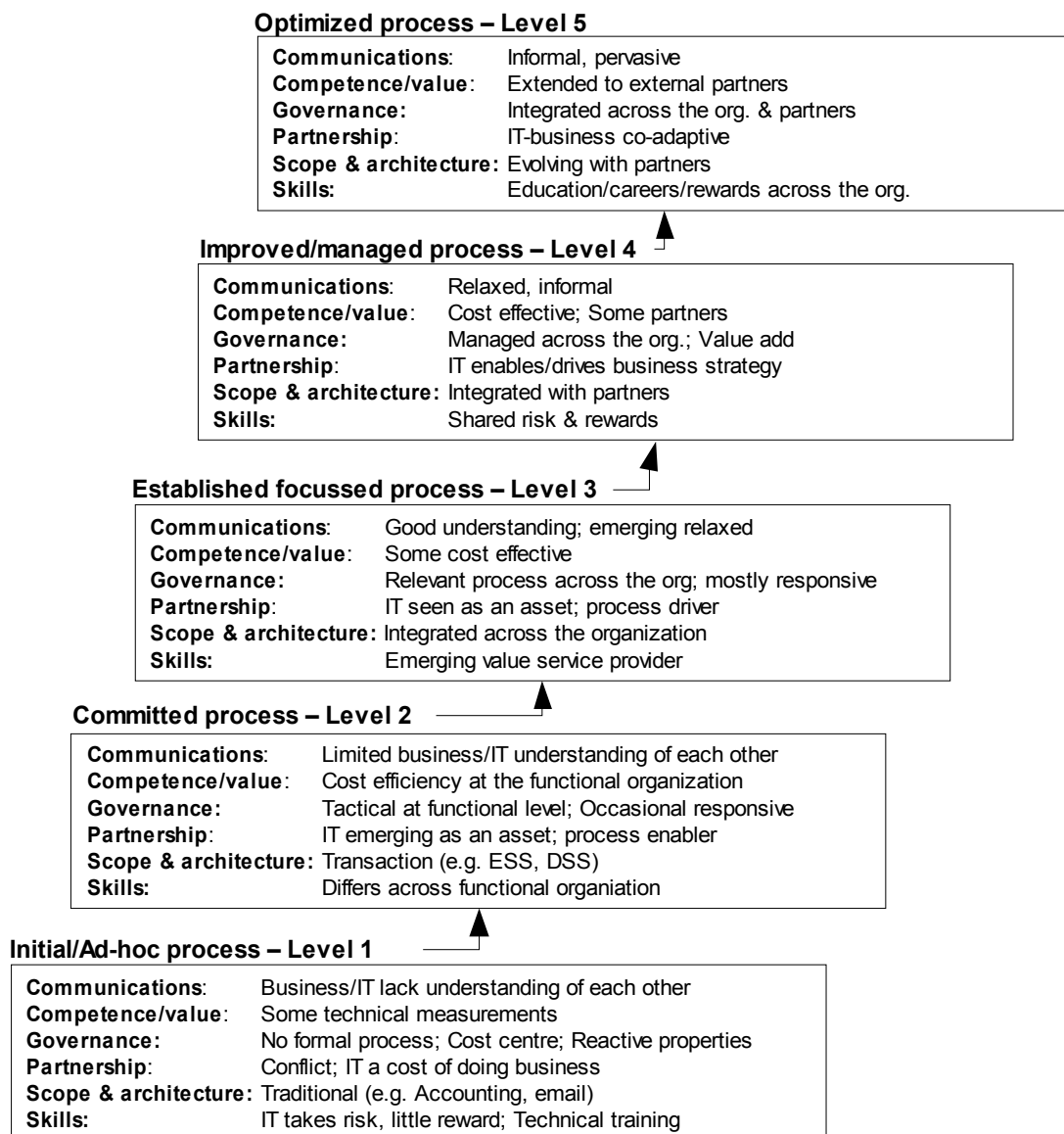


Figure 2.4. The levels within the Strategic Alignment Maturity Model of Luftman (2001)

If, as I have previously argued, the process to alignment may not be linear but may in fact be characterised by inter-related feedback loops of variables then the six step process suggested by Luftman may also be problematic. This is supported by Luftman's own research when he says "... *there is no single activity that will enable a firm to attain and sustain alignment. There are too many variables. The technology and business environments are too dynamic*" (p. 132). He then provides other evidence to support my contention. At the time of his writing Luftman had assessed 25 Fortune 500 companies and found that more than 80% of these were at level 2 of the model but with some characteristics of level 3. It also reflects research into strategic information systems planning (SISP) and the intellectual dimension of

alignment that is associated with SISP (Reich & Benbasat 2000). For example, Earl (1993) found that only a few organisations were able to employ the organisational approach to SISP even though it is clearly the most effective approach that Earl identified. Similarly, Teo & King (1997, p. 200) found that only 6.4 per cent of the organisations they surveyed had been able to reach a state of full integration of business and IS planning.

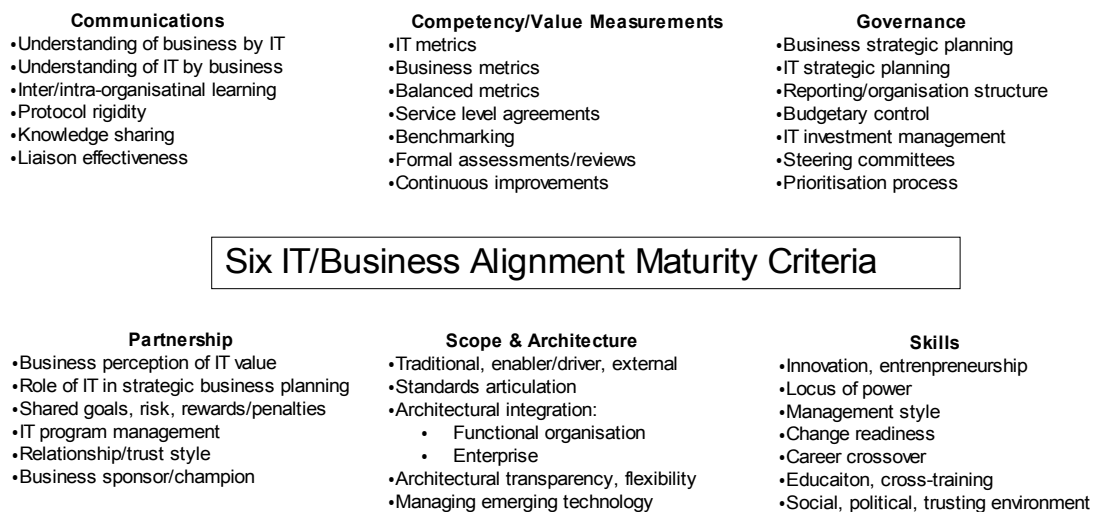


Figure 2.5. The alignment criteria used by Luftman (2001) in his strategic alignment maturity model

It appears, then, that both measuring and attaining alignment is problematic for most organisations and this is reflected in the title of Chan's (2002) paper "Why haven't we mastered alignment?" In attempting to address these problems many authors, including Luftman, have identified enablers and inhibitors to alignment.

2.4 Enablers and Inhibitors to Alignment

Prior to introducing his criteria and levels of alignment Luftman (2001, p. 108) identified the six most important enablers to alignment (in rank order) as:

- Senior executive support for IT
- IT involved in strategy development
- IT understands the business
- Business-IT partnership

- Well-prioritised IT projects
- IT demonstrates leadership

He then identifies the six most important inhibitors to alignment as:

- 1 IT/business lack close relationship
- 2 IT does not prioritise well
- 3 IT fails to meet commitments
- 4 IT does not understand business
- 5 Senior executives do not support IT
- 6 IT management lacks leadership.

Other research states that the key to addressing both the enablers and inhibitors to alignment is the development of communication and relationships between business and IT units. Without these, it is argued, none of the other enablers and inhibitors matter (Luftman, Papp & Brier 1999)². Although communication and relationships are a recurring theme in alignment related research very little effort, with some exceptions such as Feeny, Edwards & Simpson (1992), has been spent in identifying enabler and inhibitors to communication and relationships nor why they occur in some organisations but not others.

It could be argued that the variables within the models of Nelson & Coopriider (1996) and Reich and Benbasat (2000) and shown in Figure 2.3 are also enablers to alignment. The concepts within these variables are similar to those held within the enablers and inhibitors identified by Luftman (2001) above.

Teo & Ang (1999, p. 178) identified eighteen critical success factors for integrating business and IT strategic plans from the literature. They then asked respondents, senior IT managers, to rank these factors, with the following result:

- *Top management is committed to strategic use of IT*
- *Information systems (IS) management is knowledgeable about business*

² In identifying the enablers and inhibitors to alignment Luftman was referring to research that had been ongoing since 1992 and to which Papp had access.

- *Top management has confidence in the IS-department*
- *The IS department provides efficient and reliable services to user departments*
- *There is frequent communication between user and IS departments*
- *The IS staff are able to keep up with advances in IT*
- *Business and IS management work together in partnership in prioritizing applications development*
- *Business goals and objectives are made known to IS management*
- *The IS department is responsive to user needs*
- *Top management is knowledgeable about IT*
- *The IS department often comes up with creative ideas on how to use IT strategically*
- *The corporate business plan is made available to IS management*
- *There is a set of organisational goals and objectives for the IS department*
- *User departments view IS staff as competent*
- *The IS management actively participate in business planning*
- *Top management actively participates in IS planning*
- *The planning horizons for business and IS plans are similar*
- *Users actively participate in IS planning.*

A number of observations can be made from this research and ranking of critical success factors. Firstly, the ranking was done by senior IT executives. It does not reflect the views of business managers which could be different. Another limitation is that the list of CSFs was developed from the literature. We do not know if there were other CSFs that respondents may have thought important but were not included in the list. Thirdly, many of the CSFs shown here are similar to other enablers and inhibitors to alignment identified by other researchers. Fourthly, many of these CSFs are social in nature relying on the development of communication, relationships, shared system

of meaning and shared domain knowledge between IT and business managers. Fifth, the discussion provided by Teo & Ang indicates that relationships may occur between these CSFs with one CSF influencing others. This is analogous to the causal relationship between variables described in models developed by Nelson & Cooperider (1996) and Reich & Benbasat (2000) and presented earlier. However, Teo & Ang make no attempt to investigate any of these influences.

The lists of enablers and inhibitors to alignment presented above are representative of many other lists created by other authors (see, for example, Luftman & McLean 2004). We seem to have a reasonably good understanding of the issues thought to impact alignment. This is supported by Chan (2002) who investigated six business units that reportedly had achieved a high level of alignment. One outcome was that the informal structure of relationships between IT and business managers is much more important than previously thought and that “*relatively little attention has been paid to internal (vs. external) networks. Studying such networks may be the most fruitful avenue for academics studying ways to enhance IS alignment and performance*” (Chan 2002, p. 109).

Like Earl (1993) before her, Chan (2002) found that informal structure (or networks) enhances communication, shared domain knowledge, understanding, learning and trust between IT and business managers and that these are important in the development of alignment. This is reflected in IS research into the enablers and inhibitors to alignment, above, and IT and business executive relationships and which is now described. The concept is also very similar to that of social capital described in the business literature.

2.4.1 IT and Business Executive Relationships

Earlier IS research has investigated both the importance and benefits of relationships between IT and business executives and to a lesser extent between business and line managers in achieving an effective IS function and attaining business goals.

Achieving these objectives is analogous to attaining IS/business alignment. Jones, Taylor & Spencer (1995) found that while most chief executive officers (CEOs) are reasonably satisfied with their chief information officers (CIOs) there appeared to be a lack of communication between the two that meant that CIOs were generally not a

part of business strategy formulation. CIOs who have two-way communication with their CEOs are generally less concerned with planning issues than those CIOs who do not have this relationship or are structurally further removed from their CEOs. Those CIOs engaging in two-way communication have a better understanding of the CEO's wishes and the vision, goals and objectives of the organisation (DeLisi, Danielson & Posner 1998; Feeny, Edwards & Simpson 1992; Watson 1990). The work of Feeny, Edwards & Simpson (1992) emphasized the importance of including a CIO within the senior management team provided they had excellent domain knowledge and a desire to transform the organisation. An additional advantage was a CEO who was focussed on output (effectiveness) rather than throughput (efficiency) (Feeny, Edwards & Simpson 1992).

In a review of the literature on what we do, and do not, know about successful CIOs Brown (1993) found that most literature supported the proposition that non-technical skills such as communication were valued more than technical skills. However, she also noted that no empirical research on the CIO and CEO relationship had been conducted to that date.

In one of the few papers that addresses the relationship between line managers Henderson (1990) argues that the integration of functional areas, including IS, is a key to successful IS implementation and competitive advantage or, in our terms, IS/business alignment. Henderson (1990, p. 8) argues that integration is dependent on the development of partnerships between IS and other functional line managers. These partnerships are of a much closer nature than those developed between people who are merely completing a transaction. Among other things, they embody risk and trust. He identifies two dimensions of partnerships: Partnership in Context, which is the degree to which the partners believe that the relationship will endure and; Partnership on Action, which is defined as the ability of the partners to influence decisions and policies that affect the performance of the partnership (p. 8). A major criterion of a successful partnership is that the benefits must exceed those that could be achieved independently by the partners. The determinants of Partnership in Action are shared knowledge, the mutual dependency on distinctive competency and resources and, organisational linkage. Henderson (1990, p. 12) identified three types of

organisational linkage: physical process integration, information integration, and social networks, the latter relating to the development of personal relationships.

All of this could be related to social capital and this is now investigated.

2.4.2 Social Capital Theory

Social capital refers to the networks of relationships that constitute a resource in any social group. Unfortunately there is no universal definition of social capital, but the term was first used in community studies (Nahapiet & Ghoshal 1998)³. In these studies it was found that the network of personal relationships was an indicator of a well functioning neighbourhood that was able to mobilize its members to attain group goals. The network provided a basis for trust, cooperation and collective action. Social capital, in the form of networks of relationships, could explain why some communities were able to attain group goals whilst others could not.

An intrinsic part of the relationships necessary to create social capital is trust (Nahapiet & Ghoshal 1998). People tend not to share information and resources with those they do not trust, and it is this sharing that is, in effect, social capital.

One of the features of social capital is that, like knowledge, it is only valuable if it is used and it is strengthened, rather than exhausted, by use (Nahapiet & Ghoshal 1998). But, unlike most other resources within a society or organisation, it is not the property of the individual – it belongs to the group and only exists whilst that relationship exists (Burt 1992). It is also different to other resources in that it creates “*the opportunities to transform financial and human capital into profit*” (Burt 1992).

Since the early studies on neighbourhoods social capital has been used to explain why some individuals, organisations, regions and nations outperform others economically. Fukuyama (1995) argues that the prevailing networks within a society, based on who the people in that society tend to trust, can explain why some nations such as the USA tend to develop corporations and others, such as Chinese communities, develop primarily family owned businesses. The USA has a culture of trust where the ability of the person is paramount. This encourages the recruitment of outsiders to manage

³ Nahapiet & Ghoshal provide a particularly good overview of both social and intellectual capital that is well referenced. Their basic argument is that social capital is required for the development of intellectual capital which, in turn, provides a basis for competitive advantage.

and run a business for the owners, creating a corporation. Relationships beyond corporate boundaries also allows access to a wide range of information and resources. In Chinese communities it is generally only extended family members who are trusted. The networks of personal relationships tend not to extend beyond this boundary and results in an inability to access external information and resources generally limiting the size of the business. This can be related to alignment. If trust only exists within an IT functional group (“family”) or within a particular business group it limits the ability of the two groups to work together towards a common goal.

It is evident from the above that the culture of a society, or organisation, will determine to a large degree the extent and strengths of the personal relationship networks that are possible within that society (Blau 1982). Social capital theory is, then, the study of the networks of relationships that occur within social groups, and this is then used to explain why some groups outperform others.

It is generally accepted that the networks of relationships that form the basis of social capital have two major dimensions, structural and relational, with Nahapiet & Ghoshal (1998) identifying a third, the cognitive dimension.

2.4.2.1 The Structural Dimension of Networks

The structural dimension concerns itself, naturally, with the structure of the network. How many people are connected, are there redundant paths or connections and are there bridges between two or more network clusters?

The more people that a person is connected to in meaningful relationships the better, as this increases social capital. However it is not necessary for a person to be in personal contact with every other person within an extended network. Providing he or she knows someone who knows someone then it is likely that his or her access to information and resources is increased.

In theory, the optimum structure is a loose connection of clusters where there is minimum redundancy of paths within, and between, clusters (Burt 1992). This provides the maximum exposure to available information and resources with a minimum cost in developing, and maintaining, the required relationships. However,

this is unlikely to ever be achieved due to the social nature of people and, in an organisational setting, the formal structures that co-locate people with similar tasks. Some authors have argued that a formal liaison role between business and IT units should be created to enhance collaboration, knowledge sharing and alignment (Barry & O'Flaherty 2003). But it could just as easily be argued that this position would become redundant in an environment that encourages the development of informal network structures as described above. This counter argument is supported by the research of Chan (2002) who found that an informal networks between senior management was always present in business units that had developed a high degree of alignment.

2.4.2.2 The Relationship Dimension of Networks

The relationship dimension of social capital refers to the nature and strength of the relationships between pairs of people within a network. Relationships generally form as a result of repeated, effective communication. Key to their formation is the trust in, and trustworthiness of, the other party (Cohen & Fields 1999; Fukuyama 1995; Gargiulo & Rus 2002; Granovetter 1982; Nahapiet & Ghoshal 1998). In fact, so central is the idea of trust to social capital theory that Fukuyama (1995) when using this theory to explain the competitiveness of nations named his book simply "Trust".

An important aspect of the relationship dimension of social capital is the strength of the tie between actors from weak to strong (Burt 1992; Granovetter 1982). Simply, a weak tie is that typified by acquaintances, whilst strong ties hold family members and close friends together. The latter is characterized by frequent communication. Trust is a necessary ingredient of both forms of ties.

However, the strength of the tie has another aspect. As mentioned, strong ties develop between family and close friends and, often, workmates within a small workgroup. A characteristic of these clusters is that they are homogeneous – all members have access to the same resources and information, have similar belief systems whilst the "norms" of the group tends to restrict the range of possible actions. As a result they tend to foster "groupthink", inhibit the creation of knowledge and restrict the ability of a member to perform non-routine tasks (Burt 1992; Nahapiet & Ghoshal 1998).

Conversely, weak ties normally form the bridges between clusters although they can be present within a homogeneous group – you have a close relationship with a few members of a group whilst other members of that group are friends of your friends. The strength of weak ties is that, as a bridge between clusters, they allow access to other groups that have access to different resources and information. They allow the formation of a large heterogeneous network due to your relationship with acquaintances in other groups (Burt 1992; Granovetter 1982).

Nahapiet & Ghoshal (1998) have argued that social capital is a prerequisite to the development of knowledge within an organisation and that ties between network clusters are important in the flow of information between what are generally homogeneous groups. This allows different ideas to be shared and, then, the development of new ideas and knowledge. Hence the importance of informal structure, which is analogous to the relationship dimension of networks, in developing alignment identified by Chan (2002)..

Finally, in an organisational setting, formal structure can affect the development of social capital. Hierarchical structures that emphasize the adherence to rules, policies, chains of command and communication lines build cultures that are low in trust and social capital. Conversely, emergent structures built around teamwork and the achievement of results through relationships tend to create cultures that are rich in trust and social capital (Creed & Miles 1996). Relating this to alignment, the development of relationships between IT and business personnel may allow the ideas of both groups to be used to develop new business solutions. It is more likely to result in systems and services that actually meet users' needs and this then raises the credibility of the IS department.

2.4.2.3 The Cognitive Dimension of Social Networks

Nahapiet & Ghosal (1998) introduce a third dimension of alignment that they term the cognitive dimension. They define this as “... *those resources providing shared representations, interpretations, and systems of meaning among parties*” (p. 244).

This definition uses terms that are very similar in concept to those used in alignment literature and which represent factors that are known to affect alignment. These include: shared domain knowledge (Reich & Benbasat 2000); IT (management)

understands the business (Luftman 2001, p. 108; Teo & Ang 1999, p. 178); and top management is knowledgeable about the business (Teo & Ang 1999, p. 178).

The definition also reflects the attributes of an effective relationship between CEO and CIO identified by Feeny et al. (1992) and Brown (1993) and which I have already identified as being related to alignment. These include a minimal use of jargon during communication, which improves interpretations and system of meaning between parties (Nahapiet & Ghoshal 1998), and a situation where there is a reduced reliance on the referral to formal plans as the CEO and CIO already understand each others' vision, goals and objectives (Feeny, Edwards & Simpson 1992).

A major influence on the cognitive dimension of social capital is shared narratives as these have the ability for "... *creating, exchanging, and preserving rich sets of meanings*" (Nahapiet & Ghoshal 1998, p. 254). Conversely a lack of shared narratives could inhibit the development of shared meanings and relationships. This is reflected in the IS literature where it has been found that the myths and stories told within an organisation can affect relationships between business groups and the IS group as well as the status of the IS group (Avison, Cuthbertson & Powell 1999).

Implicit within the concept of social capital is the idea of knowledge and knowledge sharing which, in turn, is related to intellectual capital. Nahapiet & Ghoshal (1998) argue that social capital is a pre-requisite to the development of intellectual capital and that the latter is a basis for competitive advantage. It has been argued that knowledge can be transferred between individuals within an organisation via various means including the use of rules and procedures that impose the know-how of experts. This is related to coordination and is an efficient means of knowledge transfer where the problem situation is relatively simple. However in complex cross functional problem situations, such as IS/business alignment, it is argued that encouraging cooperation between individuals is more effective in transferring knowledge and thus improving "production" (Grant 1996).

2.5 Summary

This chapter introduced the concept of alignment and the complexity surrounding its definition and measurement. During this discussion it was demonstrated that there is a

significant social aspect to alignment that is not easily manipulated. The concept of social capital was then introduced as this appears to be relevant to the process of attaining a satisfactory level of alignment.

For social capital to thrive a network of people consisting of both strong and weak ties must exist. For this to occur relationships based on trust must develop between these people and conditions must exist for them to be able to understand each other. It would also appear that many of the terms used within the social capital literature have a near equivalent in the alignment literature and that analysis of relationships between the factors represented by these terms is similar in both disciplines. However, there appears to be a common theme in the presentation of analysis.

In their paper Nahapiet & Ghoshal (1998) develop a model that indicates linear causality between the facets of social capital and the eventual creation of new intellectual capital. However, like Reich & Benbasat (2000), they admit the dynamic and non-linear nature of these relationships (p. 250) and provide examples in their paper. The assumption of linear causality in the alignment literature reflects assumptions within the positivist epistemology that is dominant within IS research (Ridley & Keen 1998). The reliance on simple causal relationships in describing alignment is also questioned by other researchers (Ciborra 1997) whilst some authors have called for more research into the social dimension of alignment (Chan 2002; Chan & Huff 1992; Reich & Benbasat 2000).

The very nature of non-linear systems encourages either stability or exponential growth (or loss). A stable dynamic system tends to negate any actions taken to improve outcomes. The system always attempts to return to its initial state. Conversely, where exponential growth (or loss) occurs any actions tend to move the system further in that direction – “good” results become better whilst “poor” results become worse (Sterman 2000). This is the classic virtuous or vicious cycle. Either of these situations could explain the intractable nature of the alignment problem. To compound the issue the more complex the dynamics of a system the worse people do relative to potential when attempting to address a problem (Sterman 2000).

We appear to know the enablers and inhibitors to alignment as well as the pre-requisites to alignment – there is consistency in previous research. The question, then,

is “Why haven’t we mastered alignment?” (title of Chan 2002). It would appear that any research into the non-linear nature of the relationships between the enablers and inhibitors to alignment is likely to add to our body of knowledge. It may also provide practitioners with a way forward, even though there is unlikely to be a simple solution.

An objective of this research, then, was to investigate the non-linear nature of relationships between the enablers and inhibitors to alignment with particular emphasis on the social dimension of alignment and the development of social and intellectual capital.

The next chapter discusses the choice of a suitable research method and paradigm to address the issues just discussed. The following chapter then describes the methodology used to investigate the non-linear relationships between those factors that affect alignment.

3 Research Paradigm

3.1 Abstract

This chapter explains the choice of the research methodology employed, grounded theory. The research paradigm used to inform this research is then explicated as previous literature has indicated that grounded theory can, and has been, used within a number of paradigms. The discussion tends to be at two levels as the research paradigm, or researcher's theoretical lens, affects the choice of methodology and at the same time informs the use of that methodology.

3.2 Choice of Methodology

The literature has identified a number of salient issues in the choice of a methodology. These include the:

1. Research problem
2. Theoretical lens of the researcher
3. Degree of uncertainty surrounding the research problem
4. Researcher's skills and experience, and for students such as myself the
5. Dominant research paradigm within the discipline and the research institution (Gopal & Prasad 2000; Orlikowski & Baroudi 1991; Schultze 2001; Trauth 2001; Trauth & Jessup 2000; Wynn 2001).

3.2.1 Research Problem

The research problem should be the most significant influence on the choice of methodology (Crotty 1998; Trauth 2001). The problem area identified for this research, IS/business alignment, is inherently complex. As indicated in the literature review there have been numerous studies of alignment but we do not have much of an idea of how alignment is achieved. Although many enablers and inhibitors to alignment have been identified, many of them either social or organisational in nature,

we do not know how they interact within the process of alignment. This, then, provided the research problem and general research question of “What’s going on here (in alignment)?” with emphasis placed on the development of social and intellectual capital. Context was believed to be important.

Prior research has, to a large extent, ignored contextual issues and the recursive nature of connections between the many enablers and inhibitors identified as being important. To gain a better understanding of the problem area the use of a methodology that includes, rather than excludes or controls, context and complexity will be beneficial. Grounded theory is considered to be such a methodology (Fernandez 2004; Glaser & Strauss 1999; Myers 1997; Orlikowski 1993; Urquhart 2001). It emphasizes the induction of theory from empirical data and explicitly requires the researcher to investigate disconfirming data rather than either excluding or controlling that data (Glaser 1978, 1998; Orlikowski 1993). In brief, grounded theory provides the method and techniques to uncover what is going on within a substantive area, and why (Douglas 2004).

It is a feature of grounded theory that the research question is often not obvious until after data collection, analysis and the development of a theory is completed. In many instances the research question that emerges is different to that originally proposed. The emergent theory must identify the major concern, or problem, of the subjects not the a priori construction of the researcher (Glaser 1992; Urquhart 2001). This is particularly true when using the Glaserian approach to grounded theory which insists on allowing issues to be identified only through inductive analysis of collected data. By contrast Strauss & Corbin (1990) prefer the prior identification of a specific phenomenon to research (Douglas 2004).⁴

It is claimed that grounded theory allows the identification of the major concern of subjects and the basic social process that they employ in resolving this problem

⁴ In the current research the problem did change but only in degree. Initially the intent was to include all the domains, types and dimensions of alignment (see literature review for definition of these terms). The phenomenon of strategic alignment emerged from the data as providing the major problem for subjects – how to align the strategies of the organisation, business units and the IS function. Other forms of alignment, such as those identified in Figure 2.3, were rarely, if ever, raised. In this respect the research problem emerged from the data and was not pre-determined.

(Fernandez 2004; Glaser 1992; Glaser & Strauss 1999; Orlikowski 1993; Urquhart 2001). The result is a mid-range theory and so heeds the call for the development of these within IS research (Nelson et al. 2000). It is therefore thought an appropriate methodology for the research problem as it was initially developed.

Finally, according to (Glaser 1992)

A well constructed grounded theory will meet its four most central criteria: fit, work, relevance, and modifiability. If a grounded theory is carefully induced from the substantive area its categories and their properties will fit the realities under study in the eyes of subjects, practitioners and researchers in the area. If a grounded theory works it will explain the major variations in behavior in the area with respect to the processing of the main concerns of the subjects. If it fits and works the grounded theory has achieved relevance. The theory itself should not be written in stone or as a “pet”, it should be readily modifiable when new data present variations in emergent properties and categories. The theory is neither verified nor thrown out, it is modified to accommodate by integration the new concepts. When these four criteria are met, then of course the theory provides a conceptual approach to action and changes and accesses into the substantive area. In this sense it provides control in the substantive area researched (p. 15).

This, then, indicates that grounded theory is able to answer the general research problem of understanding why some organisations are able to achieve a satisfactory level of IS/business alignment whilst others cannot.

3.2.2 Theoretical Lens of the Researcher

There are a number of theoretical lenses through which a researcher can view a research problem. The use of different lenses often produces entirely different results and understanding of a problem area (Gopal & Prasad 2000; Trauth & Jessup 2000). Three major lenses have been identified as being suitable for use within IS research.

These are positivist/post positivist, interpretive and critical theory (Myers 1997; Myers & Avison 2002; Orlikowski & Baroudi 1991; Trauth 2001).

Like IS research generally, most prior research into alignment has used a positivist lens or research paradigm (Orlikowski & Baroudi 1991) and a logico-deductive (Glaser & Strauss 1999) method of development (see, for example, Henderson & Venkatraman 1993) which is often prescriptive in nature (Luftman 2000). Two results of this have been that it is often difficult to relate field observations to the theories and that most subsequent research has concentrated on verifying these early theories (for example, Avison et al. 2004). It is believed that this has restricted our understanding of alignment generally, and the issues surrounding the enablers and inhibitors to alignment in particular. We have lists of the enablers of, and inhibitors to, alignment (Luftman & McLean 2004; Luftman, Papp & Brier 1999) but we have little understanding how these variables are related nor whether the lists are exhaustive. We also have little idea of how practitioners actually go about achieving alignment.

There have been increasing calls within the IS literature for research using different theoretical lenses and qualitative rather than quantitative data to gain a different understanding of a problem area such as alignment (Gopal & Prasad 2000; Kumar, van Dissel & Bielli 1998; Nelson et al. 2000; Trauth & Jessup 2000). Therefore the use of an interpretivist approach that uses qualitative data may shed some additional light on the current research problem.

As grounded theory is compatible with an interpretivist research paradigm (Charmaz 2000; Dey 1999; Urquhart 2001) it is believed that the use of grounded theory being informed by an interpretivist research paradigm is an appropriate choice for this particular research. It is therefore explored in more detail in the next chapter.

3.2.3 Degree of Uncertainty Surrounding the Research Problem

An objective of this research is to understand “what is going on” in alignment. The very general nature of this question immediately makes the problem complex. There is not a desire to restrict the area of research to a small finite number of variables. The context in which alignment occurred is likely to be very important.

However, it has been observed that both complexity and uncertainty tend to increase when IS is considered in the context of people and their relationships with the organisation (Trauth 2001). This was the case with this research problem – although alignment has been studied for many years the complexity and uncertainty surrounding the context in which it takes place has led to a situation where we still have not mastered alignment (Chan 2002). Despite the amount of previous research into alignment we have not been able to synthesize the data into an understandable whole. There is no theory on the process of alignment although there are some descriptions of how alignment has been achieved within some organisations (see, for example, Chan 2002; Henderson & Venkatraman 1993). According to (Glaser 1992) grounded theory “... typically transcends, organizes and synthesizes large numbers of existing studies. This is a contribution to be sure, since the two prime attributes of theory are achieved: parsimony and scope” (p. 34). This organising and synthesizing occurs through the identification and explanation of the basic social process that subjects use to resolve their main problem within the substantive area being studied. Providing the theory that is developed is robust it will accommodate much of the prior research within the problem domain.

The ability of grounded theory to explore deeper subtleties of context has been observed within the IS literature and it had been recommended as a suitable methodology where an understanding of a complex area that includes processes was desired (Hughes & Jones 2003; Myers 1997; Trauth & Jessup 2000; Urquhart 2001).

3.2.4 Researcher’s Skills and Experience

My discussion of this determinant of a suitable methodology for the current research project tends to be subjective. My past research tended to use a positivist paradigm and both quantitative and qualitative data. This was primarily a result of the dominant research paradigms in use within the institutions where I was conducting my research. This earlier research assessed the suitability of system dynamics as a business process modeling technique within an IS context. This exposed me to systems thinking. As a result of this, and natural proclivities, I tend to favour a holistic, or systems, approach to understanding a problem area. I am not comfortable with the reductionist paradigm

that is dominant within the IS discipline (Orlikowski & Baroudi 1991). This is reflected in the general research question developed for this study.

My natural reaction, then, is to choose a methodology that allows the inclusion of all data rather than excluding most data in an effort to control the situation. Grounded theory allows this (Fernandez 2004; Glaser 1996, 1998; Glaser & Strauss 1999; Orlikowski 1993) and is therefore considered a suitable methodology for this research.

3.2.5 Dominant Research Paradigm within the Discipline and Research Institution

The dominance of a positivist research paradigm within the IS discipline (Myers 1997; Myers & Walsham 1998; Orlikowski & Baroudi 1991) has already been discussed. However, as a student I could also be subjected to pressure to adopt the research paradigm that is dominant within my institution (Orlikowski & Baroudi 1991; Schultze 2001; Trauth 2001; Wynn 2001). Although a positivist paradigm is dominant in both the IS discipline and within my Faculty there is an enclave of researchers within my department that use interpretivism.

A common assumption has been that a methodology is necessarily associated with a particular research paradigm (Crotty 1998). This is not the case with grounded theory as it can be informed by various research paradigms and epistemologies including post-positivism, constructionism, interpretivism and symbolic interactionism (Charmaz 2000; Denzin & Lincoln 2000; Dey 1999; Klein & Myers 2001; Orlikowski 1993; Urquhart 2001). There is, then, the possibility of “epistemological drift” (Piantanida, Tananis & Grubs 2004) when using the methodology without explicitly identifying the research paradigm prior to conducting analysis. Within the IS discipline grounded theory has been informed by interpretivism (Orlikowski 1993; Urquhart 1997) with others calling for modifications to the method to bring it more into line with a positivist philosophy (Goldkuhl & Cronholm 2003). This, then, leads to the discussion in the next section on the research paradigm that informs the use of grounded theory within this project.

Another issue is that the term “grounded theory” tends to be used very loosely. In its original intent it refers to the use of techniques explicated by Glaser & Strauss (1999)

in *The Discovery of [a] Grounded Theory*⁵. In this context grounded theory is not the methodology – it is the product. Central to this use of the term is the development of a substantive, mid-level theory induced from empirical data. Anything less than the development of a theory using the techniques explicated by Glaser & Strauss (1999) that explains the actions of subjects in resolving their major problem is not a grounded theory. The problem arises when researchers use the “grounded theory method” as a technique to guide analysis of qualitative data and where the product is not a theory (Dey 1999). This often occurs within the IS discipline (for example Howcroft & Hughes 1999; Hughes & Jones 2003). The discovery of grounded theory is therefore discussed in the next chapter as it is used within this project in its original intent.

3.3 The Research Paradigm

The previous section noted that grounded theory can be, and has been, informed by various research paradigms. This section therefore details the paradigm used within this research. It is not particularly concerned with the difference between qualitative and quantitative data even though these have been associated with interpretive and positivist paradigms respectively. It follows the argument of various writers that the divide between paradigms occurs at the epistemological level rather than at the data level (Crotty 1998; Howcroft & Hughes 1999).

The literature on research paradigms is both extensive and confused (Guba 1990) with little agreement on what constitutes an ontology, epistemology or paradigm. There does, however, seem to be some agreement within the IS literature on the paradigms that are applicable for research within the discipline. These were identified by Orlikowski & Baroudi (1991) who based their taxonomy on that of Chua (1986) and consist of positivism/post-positivism, interpretivism and critical theory/inquiry.

There is also some form of agreement within the literature that a paradigm is the theoretical lens through which a problem is viewed and consists of both the ontological and epistemological assumptions being used either explicitly or implicitly

⁵ The title of Glaser & Strauss' book is “*The Discovery of Grounded Theory*”. I believe that this has caused confusion. As far as I can determine, Glaser & Strauss have never claimed to have developed a new methodology – grounded theory. They described a number of techniques that enhance the development of a theory grounded in data. Most, if not all, these techniques were already in use.

(Crotty 1998; Denzin & Lincoln 2000; Guba 1990; Lincoln 1990; Lincoln & Guba 2000; Orlikowski & Baroudi 1991).

In discussing research paradigms the taxonomy of Crotty (1998) will be used. This is shown at Table 3.1. Note that Crotty uses the term ‘Theoretical perspective’ instead of the more usual research paradigm.

Epistemology	Theoretical perspective	Methodology	Methods
Objectivism Constructionism Subjectivism (and their variants)	Positivism (and post-positivism) Interpretivism <ul style="list-style-type: none"> • Symbolic interactionism • Phenomenology • Hermeneutics Critical inquiry Feminism Postmodernism <i>Etc</i>	Experimental research Survey research Ethnography Phenomenological research Grounded theory Heuristic inquiry Action research Discourse analysis Feminist standpoint research <i>Etc</i>	Sampling Measurement and scaling Questionnaire Observation 1 participant 2 non-participant Interview Focus group Case study Life history Narrative Visual ethnographic methods Statistical analysis Data reduction Theme identification Comparative analysis Cognitive mapping Interpretive methods Document analysis Content analysis Conversation analysis <i>etc</i>

Table 3.1. Taxonomy of Research Paradigms from Crotty (1998, p. 5)

Crotty (1998) argues that with few exceptions the items towards the left hand column of Table 3.1 can inform those to their right. The one exception that Crotty explicitly identifies is that positivism (and post-positivism) is always associated with an objectivist epistemology which, in turn, is based on a realist ontology.

Note that Crotty (1998) does not include ontology within his table. His argument is that, in most instances, epistemology and ontology are closely entwined and difficult to separate. Having said this he then attempts to separate the two whenever he speaks of ontology. Crotty identifies only two ontologies – realism and idealism. The latter term is at odds with much other literature, for example that of Burrell & Morgan (2000), that uses the term nominalism rather than idealism. According to these authors

realism and nominalism are at the opposite ends of an ontological continuum (Burrell & Morgan 1979, p. 3).

Using the taxonomy shown in Table 3.1 together with the more normal ontological nomenclature used by Burrell & Morgan (2000) this research is based on a nominalist ontology and informed by a constructionist epistemology via an interpretive research paradigm to inform the grounded theory methodology that uses both focus groups and interviews as data collection methods.

The ontology and epistemology informing the paradigm are discussed below, with the section on constructionism providing the reason for making the above statement without prior discussion followed by an informed choice. The reasons for choosing interpretivism as the paradigm that informs this research are then given.

Ontology: the nature of existence of things (Crotty 1998) or “*What is the nature of the ‘knowable’? Or, what is the nature of ‘reality’*” (Guba 1990, p. 18). Ontology is important because “... *nowhere is the failure to explore ontological assumptions more apparent than in conceptions of information technology by information systems researchers*” (Orlikowski & Robey 1991, p. 145). These authors argue that the lack of determining ontological assumptions assumes that it is unproblematic and leads to simplified research based on a single ontological perspective without regard to the others. An objectivist epistemology using a realist ontology is the most common approach in IS research (Orlikowski & Robey 1991). As previously mentioned (Crotty 1998) identifies only two ontologies:

- **Realism** – Things exist external to our understanding (Crotty 1998). That is, we do not have to understand something, or give it meaning, for it to be there. Some things, such as the rules to a card game, are socially constructed but they are nonetheless real.
- **Idealism:** “... is the philosophical view that what is real is somehow confined to what is in the mind, that is, it consists only of ‘ideas’” (Crotty 1998, p. 64).

The concept of idealism that is used by Crotty is very similar to that of nominalism used by other authors.

- **Nominalism:** Social reality does not exist independently of human cognition. In order to structure our action we use names, concepts and labels to negotiate the social constructs that we create. *“The nominalist does not admit to there being any 'real' structure to the world which these concepts are used to describe. The 'names' used are regarded as artificial creations whose utility is based upon their convenience as tools for describing, making sense of and negotiating the external world”* (Burrell & Morgan 2000, p. 4).

- ***Nominalism is the ontology that informs this research.***

Epistemology: how we know what we know (Crotty 1998) or *“What is the relationship between the knower (the inquirer) and the known (or knowable)”* (Guba 1990, p. 18). According to (Crotty 1998) it is at this point where the divide between various research paradigms exists with objectivism informing positivism and either constructionism or subjectivism informing the remaining paradigms. As constructionism is the epistemology used in this research it is described below.

- **Constructionism:** Using this epistemology objects exist but their meaning is socially constructed through our engagement with them. Crotty (1998) carefully differentiates between constructionism and constructivism. In the former different people can construct different meanings for the same object depending on their culture, history, beliefs etc. (Crotty 1998). Under this view culture pre-empts, and to a large extent determines, meaning making. Constructivism, however, ignores the influence of culture, beliefs, history and assumes that a person constructs meaning at the time of engaging with the object. This distinction is similar to that made between “weak” and “strong” constructionism described by Orlikowsky and Baroudi (1991) and Schwandt (2000).

When reading Crotty’s book an interpretation that can be put on his distinction is that a researcher using a constructivist epistemology can construct meaning from his observations of a phenomenon but may not affect it or be affected by it. However, there appears to be an assumption with a

constructionist epistemology that the act of constructing meaning, being an interaction, immediately affects the observer's history so affecting the object and its meaning. The interaction impacts both the object and the observer affecting any future meaning making. Both of these assumptions are consistent with the description of "weak" and "strong" constructionism (Orlikowski & Baroudi 1991; Schwandt 2000).

An implication of this distinction is that interpretive research based on a constructivist epistemology can be used in conjunction with positivist research to provide triangulation as the observer is assumed to be removed from the phenomenon being studied. However, this combination of research paradigms is not possible with a constructionist perspective (Orlikowski & Baroudi 1991; Schwandt 1994). As this research uses a constructionist epistemology the use of multiple paradigms within the study is not appropriate.

A common assumption made by researchers who hold to a constructionist epistemology is that they cannot effectively use other epistemologies and ontologies— they are incompatible (Orlikowski & Baroudi 1991). This mirrors my own beliefs and explains the earlier statement that provided the ontology and epistemology used in this study without discussing various positions then making a choice. I don't have a choice of ontology and epistemology – they are a part of my self. Any attempt to utilize different positions will almost certainly result in epistemological drift (Piantanida, Tananis & Grubs 2004).

Having determined the ontology and epistemology that will drive this study there is a choice of research paradigm.

3.3.1 Reasons for Choosing Interpretivism as the Paradigm

Research in the IS discipline has been predominantly informed through a positivist lens (Lee 1999; Myers 1997; Orlikowski & Baroudi 1991; Pather & Remenyi 2004) which always uses a realist ontology and objectivist epistemology (Crotty 1998). Objectivism assumes that the object being studied holds the meaning. Meaning is not

socially constructed and if we study the object with enough diligence the **one** meaning that it holds will be revealed. To discover this meaning the researcher normally crafts precise measurements that will detect and gauge those dimensions of reality that are of interest in the particular research project (Crotty 1998; Orlikowski & Baroudi 1991). As mentioned earlier objectivism is incompatible with the constructionism that I employ to make meaning of the world. This incompatibility then leads to other issues surrounding the use of a positivist paradigm in IS research.

Firstly, it is argued that a positivist paradigm, especially when used with quantitative data, limits the types of questions that can be asked then investigated (Ciborra 1998; Orlikowski & Baroudi 1991) with Ciborra citing the problems in alignment research in particular. He argues that both context and complexity tend to be ignored with the result being simplified models that are of little use to either practitioners or to our understanding. A major objective of the current research was to include both context and complexity.

Secondly, the use of a positivist paradigm often leads to the deductive development of a priori hypotheses that are then tested (Crotty 1998; Orlikowski & Baroudi 1991). An example of this in alignment research is that of Reich & Benbasat (2000) who developed a research model from the alignment literature, shown at Figure 3.1.

The model indicates linear causal relationships between variables which were then tested using qualitative data. The authors state that they believe that these relationships are, in fact, recursive. They do not test this particular hypothesis! The positivist paradigm normally insists on linear causality not recursive relationships between variables (Crotty 1998; Orlikowski & Baroudi 1991). My belief is that most of the relationships to be found in alignment are recursive and an objective of this study was to investigate this.

Thirdly, positivism is nearly always associated with reductionism (Crotty 1998; Orlikowski & Baroudi 1991). As previously explained my prior training and natural proclivity is to include variables, not exclude them. Excluding a variable assumes that it has a value of zero – probably the only value we know it can't have (paraphrased from Forrester 1961).

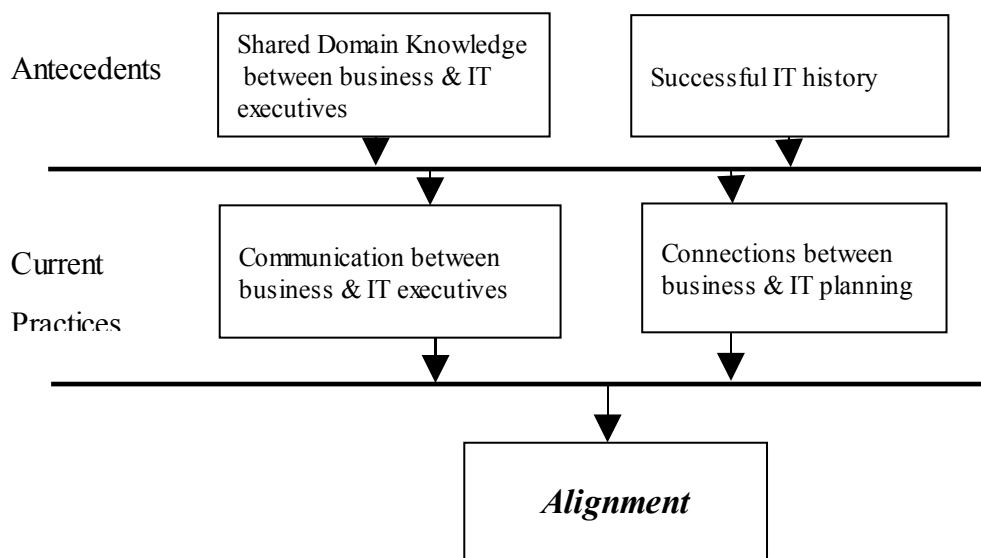


Figure 3.1. Research model of Reich & Benbasat, 2000 developed deductively from the literature. Note the linear causality, typical within positivist research, even though the authors stated they believed relationships were actually recursive.

These issues, then, made the use of a positivist paradigm difficult to employ in this research. There have been very few research projects within the IS discipline using critical inquiry (Orlikowski & Baroudi 1991) and, as a student researcher, I considered it too risky to employ. This leaves interpretivism.

3.4 Interpretivism

The literature review chapter outlines the considerable research that has been conducted in an attempt to understand alignment but, as mentioned previously, this does not appear to have been achieved (Chan 2002). One of the reasons for this is the complexity of the problem area. In developing the major research problem for this study many other questions were considered relevant but were subsumed, or implicitly embedded, within the problem: how are practitioners constrained or enabled when attempting to attain alignment? Are there interactions between various groups that make one, or more, enabler or inhibitor more important than others in a particular context? How? Why? What are the characteristics of the social process that is enacted during alignment? Are practitioners consciously aware of the reality they construct? How does this affect alignment? How does it change over time? Do the enablers and inhibitors interact over time and impact the process of alignment and if so, how? Answering these questions requires considering them within the context of relations

between people and organisation which increases the uncertainty and complexity of the research problem (Trauth 2001).

These questions are also typical of the type that can be addressed using interpretivism with its recognition that as meanings and realities are formed, transferred and used they may change over time as circumstances, objectives and constituencies change (Orlikowski & Baroudi 1991). These authors re-stated this another way later in their paper: “... *social process can be usefully studied with an interpretive perspective, which is explicitly designed to capture complex, dynamic, social phenomena that are both context and time dependent*” (p. 18). That is, the aim of interpretive research is to understand the interaction between members of a social group and between the group and the context in which it is operating. In understanding this interaction researchers endeavour to discover how these people interpret then enact their particular realities (Klein & Myers 1999; Orlikowski & Baroudi 1991). But, “... *interpretive methods of research in IS are aimed at producing an understanding of the context of the information system, and the process whereby the information system influences and is influenced by the context*” (Myers & Walsham 1998, p. 233). Using the more general description of interpretive research and rephrasing the quote of Myers and Walsham, it would appear that interpretive research could also be used within the IS field to ‘produce an understanding of the context of information systems managers and the process whereby the information systems managers influence and are influenced by the context in which they operate.’ This is, in effect, the aim of this research.

Interpretivism is therefore a relevant research paradigm to use when addressing the general questions posed in this research. It has also been argued that an interpretive paradigm is preferable as uncertainty increases (Trauth 2001) or where positivist methods have not been able to illuminate the problem (Wynn 2001). Its use would also heed the calls of Orlikowski and Baroudi (1991) and Goles and Hirschheim (2000) to place less reliance on a single paradigm, positivism, in IS research. The latter appears to be particularly pertinent to research into alignment. Additionally, an interpretivist research paradigm is consistent with the constructionist epistemology (Crotty 1998) which is being used within this study.

3.5 Summary

This chapter has detailed the choice of an appropriate research methodology, grounded theory, given the complexity of the research question and its context. As grounded theory can be, and has been, informed via a variety of research paradigms some time was spent explaining the research paradigm in use (interpretivism) and the associated ontology (nominalism) and epistemology (constructionism) being used.

The next chapter will describe the research methodology and associated data collection in more detail.

4 Methodology

4.1 Abstract

This chapter will briefly describe the grounded theory methodology as it is used within this research. It then highlights a number of issues and dilemmas that arose with its use and describes how these were resolved. It then provides information on data collection and the rationale used to determine the most appropriate data collection techniques and choice of subjects. Finally, it provides some information on the method of analysis and justification for the use of computer aided qualitative data analysis software (CAQDAS).

4.2 Grounded Theory

The previous chapters have highlighted the need for IS research, and alignment research in particular, to encompass both context and complexity. It was argued that most alignment research tends to adopt a positivist paradigm that ignores both of these. Therefore an interpretive approach was chosen to inform the current research. It was also argued in the previous chapter that a method that could accommodate both an interpretive approach as well as include context and complexity is grounded theory. However, grounded theory is little more than a series of techniques that can be used to induce a theory grounded in data. A researcher must make many choices regarding how this “method” is utilised in a specific research endeavour.

One of the problems encountered with grounded theory is the number of seemingly conflicting thoughts on what it is. Even the co-originsators cannot agree whether it was originally a quantitative method (Glaser 1992, p. 7) or a qualitative method (Strauss & Corbin 1990) although Glaser (1998) maintains it can be used with either quantitative or qualitative data providing the resulting theory is developed inductively.

Other authors argue that grounded theory as espoused by both the co-originsators is essentially positivist in nature (Denzin & Lincoln 2000) whilst others argue it is primarily an interpretivist method using qualitative data (Howcroft & Hughes 1999)

and still others maintain that it can be used with either an objectivist or constructivist lens (Charmaz 2000). Hence the time spent in the previous chapter enunciating the theoretical perspective, or research paradigm, used within this study. However, it is possible to develop from the literature a generally accepted set of tenets that tend to define grounded theory and provide guidelines for its use. According to Dey (1999), who based his work on that of Creswell (1998, pp. 1-2) the tenets of grounded theory are:

- 1 The aim of grounded theory is to generate or discover a theory
- 2 The researcher has to set aside theoretical ideas to allow a “substantive” theory to emerge
- 3 Theory focuses on how individuals interact in relation to the phenomenon under study
- 4 Theory asserts a plausible relation between concepts and sets of concepts
- 5 Theory is derived from data acquired through fieldwork interviews, observations, and documents
- 6 Data analysis is systematic and begins as soon as data becomes available
- 7 Data analysis proceeds through identifying categories and connecting them
- 8 Further data collection (or sampling) is based on emerging concepts
- 9 These concepts are developed through constant comparison with additional data
- 10 Data collection can stop when no new conceptualizations emerge
- 11 Data analysis proceeds from “open” coding (identifying categories, properties, and dimensions) through axial coding (examining conditions, strategies, and consequences) to selective coding around an emerging story line
- 12 The resulting theory can be reported in a narrative framework or as a set of propositions.

Charmaz (2000, p. 509) defines grounded theory slightly differently when she says:

Essentially, grounded theory methods consist of systematic inductive guidelines for collecting and analyzing data to build middle-range theoretical frameworks that explain the collected data. Throughout the research process, grounded theorists develop analytic interpretations of their data to focus further data collection, which they use in turn to inform and refine their developing theoretical analyses.

She then goes on to say:

The strategies of grounded theory include (a) simultaneous collection and analysis of data, (b) a two-step data coding process, (c) comparative methods, (d) memo writing aimed at the construction of conceptual analyses, (e) sampling to refine the researcher's emerging theoretical ideas, and (f) integration of the theoretical framework (Charmaz 2000, pp. 510-511).

The two key features that make grounded theory different from other methods is the need for the researcher to set aside theoretical ideas, and that concepts are established then validated through constant comparison with data (Urquhart 2001). These will be discussed further below.

The last item in Dey's list incorporates a hidden meaning that was discussed in the previous chapter on Research Paradigm. The statement implies that those grounded theories reported in a narrative framework have probably been informed via interpretivism whilst those providing a set of propositions are more likely to have been informed by a positivist philosophy. In some circumstances a single piece of research, for example that of Fernandez (2003), could include aspects of both interpretivism and positivism with the write-up including both a narrative framework and a set of propositions. In this particular piece of work the author explicitly stated that the theory was induced from his data via an interpretivist paradigm but that his development of a set of propositions indicated a partial use of positivism. The current work will be reported in a narrative framework without a set of propositions and is therefore set firmly within an interpretivist paradigm as discussed in the previous chapter.

4.2.1 Glaserian Approach to Grounded Theory

The Glaserian approach to grounded theory can best be described using the model of Fernandez (2004) shown in Figure 4.1. The paper by Fernandez provides a concise but complete and easily understood description of the Glaserian approach to grounded theory. There are other works that either describe the method (Dick) , raise practical and philosophical issues (Urquhart 2001) or do both as well as critiquing the method (Dey 1999). There are also four books which, I believe, are essential reading for anyone contemplating the use of the Glaserian approach to grounded theory. These are: (Glaser 1978, 1992, 1998; Glaser & Strauss 1999). Rather than re-describing this approach to grounded theory the following discussion will concentrate on some of the important issues, and highlight some of the differences between Glaser's description of the method and other's interpretation. At the same time some of the dilemmas faced during the current research will be raised.

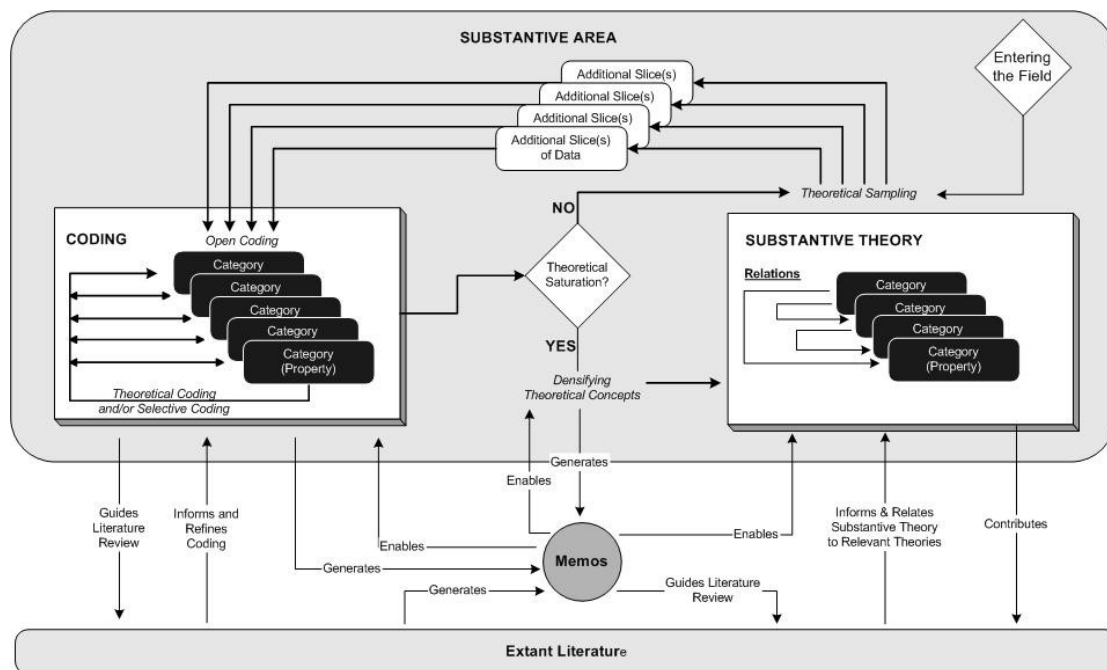


Figure 4.1. Model of the Grounded Theory methodology from Fernandez (2004)

The model in Figure 4.1 incorporates all of Dey's tenets, above, that refer to the development of a grounded theory.

4.2.1.1 Theoretical Sampling

The model at Figure 4.1, and tenets above, indicate that the researcher enters the field by immediately collecting data via theoretical sampling. Unlike quantitative methods where a valid random sample of data that is a statistical representation of the population is often required, data are chosen for their ability to provide information on the problem being investigated (Glaser 1978, 1992). This is because in grounded theory the unit of analysis is normally the process that subjects use to solve their problem (Douglas 2004; Glaser 1992). The unit of analysis is not normally an actor or institution.

In this research data collection commenced the same day I enrolled in the PhD. I wanted to understand what was going on in alignment and whether there was any consistency in the process that practitioners take in achieving alignment, and at the same time to identify the enablers and inhibitors that practitioners' believed were of importance. Subjects were therefore chosen on their ability to inform this study. As a result both IT and business managers from various organisations and from various managerial levels within their organisations were interviewed. Was there a difference in the alignment process used by IT and business managers? Was there a difference in the process used by high and lower level managers? The choice of subjects provided a sample that could answer these types of questions and allow the emergence of a more robust theory.

As data collection and analysis continued and a theory began to emerge from the data it was apparent that there were gaps in the data especially surrounding the properties of major coding categories. Subjects were then selected on their ability to provide data that would eliminate these gaps. This is consistent with the concept of theoretical sampling used in grounded theory (Fernandez 2004; Glaser 1998; Urquhart 2001).

Details of subjects is provided at Appendix A.

4.2.1.2 The Literature Review Dilemma

The model in Figure 4.1, as do the tenets provided by Dey (1999), indicates that the researcher enters the field without conducting prior research into the substantive area being investigated. This is in accordance with the original conception of grounded

theory (Glaser & Strauss 1999) and is emphasized by (Glaser 1992). The argument is that prior reading will sensitize the researcher to what the data **should** be saying rather than what it **is** saying (Glaser 1992). That is, the researcher may unconsciously be utilizing pre-conceived codes developed from the literature. It has been argued, though, that this stricture is more a call to be sensitive to the data rather than an inviolate rule (Urquhart 2001; Urquhart & Fernandez 2006). Additionally, the requirement for no prior reading is at odds with some of the recommendations of Strauss & Corbin (1990) and others who prefer a more positivist approach to grounded theory (Goldkuhl & Cronholm 2003) or who are not primarily concerned with developing an inductive theory from the data (Howcroft & Hughes 1999; Hughes & Jones 2003). All of these researchers also maintain that it is permissible to develop categories from the literature and then fit new data to them. This disagreement on whether a priori reading of the literature in the substantive area being studied highlights one of the differences that occurred between the originators of grounded theory. It eventually led to a very public disagreement between Glaser and Strauss (Urquhart 2001) with one result being Glaser's (1992) rebuttal of the original Strauss and Corbin book (1990). It also provided me with a dilemma.

As a student I was required to conduct a thorough literature review to both select a suitable research problem and become familiar with the chosen area (Goldkuhl & Cronholm 2003). Much of this was conducted prior to enrolling. The later choice of the Glaserian approach to grounded theory methodology meant that I could then be taking pre-conceived notions of what I should find into my analysis. This was an important issue as I wished to develop a grounded theory and not just use grounded theory techniques during data analysis. The decision was therefore made to initially collect data via unstructured focus groups (Morgan, D.L. 1997; Stewart & Shamdasani 1990). Participants of these groups were provided with two general questions to discuss regarding alignment and advised how they could self-manage the session (Morgan, D.L. 1997). This greatly shifted the balance of power from the facilitator (myself) to the participants (Blackburn & Stokes 2000) thus reducing my influence on the topics and areas discussed by subjects (Berg 1998), and as a result allowed participants to discuss issues of importance to themselves and opened up new areas for investigation (Morgan, D.L. 1997; Morgan 1998).

In hindsight the use of unstructured focus groups as an initial data collection method was probably the most significant research design decision made during this grounded theory study. It substantially resolved the conflicting requirements to not conduct a literature review for a grounded theory study, but the need to conduct a literature review prior to conducting student research. Their use identified consistent concerns of participants in the alignment area that have been given little consideration in the alignment literature. These concerns were then followed up in the individual interviews (Fontana & Frey 2000) that followed the focus group sessions. Because of the importance of this decision unstructured focus groups are given a more extensive treatment in the data collection section that follows.

But the literature provided one more dilemma during this research – where to introduce it within this dissertation. This question appears to be poorly addressed within the grounded theory literature which concentrates on theory development at the expense of theory description. The model of Fernandez shown at Figure 4.1 provides valuable insights in resolving this particular dilemma. Glaser (1992) argues that reading of literature within the substantive area of the study can commence once a theory begins to emerge from the data. This, then, provides additional theoretical sensitivity to the data. The model at Figure 4.1 follows this line of reasoning with open coding guiding the literature review. The development of memos, among other things the theoretical musings of relationships between codes and emerging categories (Glaser 1978), also guide the literature review. The literature then informs and relates the emerging substantive theory to relevant extant theories (Fernandez 2004). In the words of (Glaser 1996):

It is now time to start integrating the literature into the dissertation, as what literature to look at itself emerges. This is usually a literature that could not have been anticipated before the discovery of the core variable and its ensuing theoretical coding of concepts (p. xiv).

The literature implication of a BSP⁶ is that it organizes and transcends large bodies of other data in the field. It is always easier to discover a BSP in a field with few or no studies, but when

⁶ Basic Social Process. In effect the grounded theory that explains the social process that subjects utilize to resolve their major problem. Both of these need to be discovered from the data.

generating a BSP in⁷ field with many research efforts and publications, such as alcoholism or chronic illness, a BSP transcends and organizes much of the literature. This is much more than just synthesizing, which puts all the literature on the same conceptual level. A BSP raises the conceptual level of many disparate articles with an underlying meaning.” (p. xv).

Using this logic, this dissertation introduces much of the alignment literature during the write-up of the theory and in so doing integrates it within the theory.

4.2.1.3 Coding Dilemmas

Once a piece of data, often an interview, is collected it is immediately subjected to open coding to extract a set of codes from the data and *without any preconceived set of codes*. The latter is a requirement of the Glaserian approach to grounded theory and highlights another difference between this approach and that of Strauss & Corbin (1990) which encourages the use of preconceived codes developed from the literature as do other authors (Goldkuhl & Cronholm 2003; Howcroft & Hughes 1999; Hughes & Jones 2003). The major philosophical difference between the two originators of grounded theory is that Glaser insists that theory be developed **inductively** from the data whilst Strauss maintains that theory can be developed both inductively and deductively. Glaser argues that using codes developed from the literature immediately compromises the resulting theory as it is no longer based on empirical evidence (Glaser 1992)⁸.

It has been argued that the version of grounded theory used by Strauss & Corbin (1990) is essentially positivist in nature (Denzin & Lincoln 2000) whilst Goldkuhl et al. (2003) explicitly state that they are attempting to adapt grounded theory to make it more amenable to positivist research. The use of pre-conceived categories developed from the literature is compatible with the use of positivism to inform the research.

⁷ Many of the books published by Sociology Press, which publishes most of Glaser's books, are particularly poorly edited with numerous spelling and grammatical errors. This is an example.

⁸ This is an oversimplification. Glaser indicates that there is a role for deductive reasoning, but it is limited. He specifically warns against developing codes from the literature.

Pre-conceived categories were not used in this study as it is firmly located within an interpretivist paradigm.

Once codes are identified it must be determined how they conceptually “fit together.” Codes do not exist in isolation. One code is related to other codes in some fashion. How a researcher conceptually sees these relationships tends to determine the coding family he or she will use. Glaser (1978) has identified eighteen coding families but maintains there are more depending on the intent of the researcher and how he or she perceives the problem. These, then, allow many ways to visualize the relationships between codes and categories depending on the data and the lens being brought to bear. The latter is often the result of a researcher’s prior experience and worldview (Glaser 1978). The most common coding family used in grounded theory research is the so-called “Six C’s” (cause, consequence, covariance, contingent, condition, context) which is very similar in nature to the single coding family described by Strauss & Corbin (1990). The Six C’s, as does the coding family of Strauss & Corbin, assumes a linear causal relationship and could, therefore, be argued to indicate the use of positivism as the underlying research paradigm or, at the least, a positivist influence.

Due to my prior training in systems thinking I am more sensitive to the recursive relationships between codes and variables rather than a linear cause/effect relationship. Therefore, considering my prior experience, worldview and the research paradigm informing this study, the main coding family in use during this research is the interactive family which can be described as the:

Mutual effects, reciprocity, mutual trajectory, mutual dependency, interdependence, interaction of effects, covariance. This code is an effort to capture the interacting pattern of two or more variables, when the analyst cannot say which comes first. Nor does it matter, probably. For example, rewards lead to motivation to do the rewarded behavior, but also motivation to work leads to seeking rewards. Thus once the ball is rolling they feed on each other. They are interactive, no matter how its started, nor how it ends. The inplay of interactive effects is clearly related in some cases to the strategy

family, when one actor is purposefully trying to advantage or position himself (Glaser 1978, p. 76).

The interactive family is very similar to a causal network (Miles & Huberman 1994) but with one major difference. The interactive family identifies relationships, influences and, where possible, consequences. That is, they tend to be explanatory claims or assertions commonly held by subjects (Miles & Huberman 1994). Unlike a causal map the interactive coding family does not attempt a claim that a change in one variable **causes** a change in another. The latter infers that some attempt has been made to verify the causal link. This is not an objective within the development of a grounded theory (Glaser & Strauss 1999) with one argument being that “...*causality is not a workable concept when it comes to human behavior*” due to the complex web of interacting intentions and actions within an organisation (Morgan, G. 1997, p. 145).

The research described in this dissertation identifies the major concern of participants as being the ambiguity surrounding strategies in use by business managers. The latter are often a result of the motivation and incentive schemes operating within their organisations leading to espoused strategies either being ignored or modified during implementation. It is clear that managers are purposefully trying to advantage themselves or their business units often to the disadvantage of other individuals or business units. Therefore, as predicted by Glaser (1978), a second coding family that was employed, minimally, was the strategy family, described as:

Strategies, tactics, mechanisms, managed, way, manipulation, maneuverings, dealing with, handling, techniques, ploys, means, goals, arrangements, dominating, positioning. This family has lots of “grab” for analysts and readers alike. Interaction sociologists especially talk a lot about how people strategy people. However, the structuralists also talk of mechanisms and arrangements that strategy people from the point of view of social organisations.

The point to keep clear on is whether or not there was a conscious act to maneuver people. If not, then a behavior pattern is a consequence of another behavior, and it is inaccurate to impute that the behavior was the result of a conscious approach to manage others (p. 76).

The last paragraph is important for this research. In most instances managers were attempting to advantage themselves but in very few cases did subjects indicate that in doing so managers purposely maneuvered other people. They were simply maximizing their own performance measures by choosing how to implement business strategies. In doing so they often ignored the effect of their choices on others. As there is little evidence to support the purposive maneuvering of others the strategy coding family was used sparingly.

The use of the interactive coding family also reflects my preferred metaphor of “organism” when considering an organisation and especially its concept of homeostasis which refers to the self-regulation of organisations and their tendency to remain in a steady state (Morgan, G. 1997). This dominant image of an organisation has inevitably affected the development of the emergent theory described here.

4.2.1.4 Minus Mentoring

This refers to the situation where a researcher, often a student, embarks on a grounded theory project without a mentor versed in the methodology or its techniques (Glaser 1998). This describes my own situation. My supervisors although familiar with both interpretive and qualitative research were unfamiliar with grounded theory and, as far as is known, I am the first person within my faculty to attempt its use.

The result is a very slow learning curve and a long gestation for the emerging theory (Howcroft & Hughes 1999). This is dominated by a frantic search for relevant texts and repeated attempts to find others who were either using or had used the method (Fernandez 2004).

An associated issue is the confusion that surrounds the method’s insistence on induction rather than deduction. This confusion must be tolerated (Fernandez 2004; Glaser 1978, 1998) but leads to questions like “What is this data telling me? I can open code into categories, but what are the conceptual relationships and **where is my theory?**” This confusion is more likely to occur when using Glaser’s less specific analytical approach to grounded theory compared to the more detailed guidelines for analysis and theory development advocated by Strauss (Douglas 2004).

In overcoming my minus mentor state I developed a small network of experienced grounded theorists. Although dealt with very briefly here, the issue of minus mentoring is extremely daunting when conducting grounded theory and cannot be overemphasized.

4.3 Data Collection

Any data, qualitative or quantitative, collected either formally or informally can be used to construct a grounded theory providing that theory is developed inductively from the data (Charmaz 2000; Glaser 1998). This leaves a wide choice of data collection methods, types of data and potential data collection sites.

An objective of this study is to develop a substantive theory on how practitioners resolve their major problem within alignment – whatever that is. A concern, then, is to cast the data collection net wide enough to be able to identify this major problem and to be confident that the resulting theory is representative of actions taken by practitioners. The literature has indicated that alignment related actions taken within organisations are very diverse (Chan & Huff 1992; Ciborra 1998; Earl 1993; Henderson & Venkatraman 1993; Reich & Benbasat 1996). Consequently a case study (Cavaye 1996; Miles & Huberman 1994; Yin 1994) is most likely to uncover issues pertinent to a single organisation and is unlikely to be representative of general alignment issues. It is believed that a case study, given the research problem and objectives, is not a suitable approach. The research problem needed data from various organisations: large, small, local, international.

The literature review chapter also noted that the vast majority of research conducted into alignment has been at the CEO and CIO level. We don't know what happens at lower levels of the organisation and whether this is, in fact, important to alignment. This indicated that data needed to be collected from IS managers at various levels of an organisation.

Additionally, most research has considered alignment primarily from the perspective of the CIO. Do business managers, especially those below CEO level, hold different views on what is the major problem they face in attempting to gain alignment? We don't know.

The above indicates that data needed to be collected from:

- 1 Various organisations having different characteristics
- 2 Both IS and business managers who work at various hierarchical levels within their organisations.

These, then, support the call for data for a grounded theory study to come from various sources to ensure a rich theory that can explain all variations in data (Dey 1999; Glaser & Strauss 1999).

Although not essential, it is normal to use qualitative data in a grounded theory study and often this data is collected via interviews (Dey 1999; Glaser 1978, 1998; Glaser & Strauss 1999). The use of interviews allows different questions to be asked compared to questionnaires/surveys (Janesick 2000; Kvale 1996). These questions are more likely to be appropriate to the research problem being reported in this dissertation which is more interested in the *how* and *why* rather than the *what* of alignment (Fontana & Frey 2000).

But, the use of interviews within grounded theory assumes that the researcher is not being influenced by the extant literature when developing an interview instrument. This was not the case within this research as explained. Unstructured focus groups were therefore used to identify those issues of alignment important to practitioners. These issues were then investigated in more detail through individual semi-structured interviews.

This, then, provided an outline plan of the data collection for this research:

- Conduct focus groups to to identify the core alignment problem of practitioners and gain an appreciation of the alignment issues important to them.
- Conduct individual semi-structured interviews to investigate those issues in detail
 - Individual interviews to be conducted until theoretical saturation occurred. The emerging theory would determine when data collection and analysis is complete.

- Sampling to be purposive rather than representative.

Discussion of both these data collection methods is now provided.

4.3.1 A Priori Knowledge and the use of Focus Groups

As discussed previously a tenet of the grounded theory methodology is that the researcher will not take a priori knowledge of the substantive area being explored into the investigation (Dey 1999; Fernandez 2004; Glaser 1998; Urquhart 2001). A requirement of my enrolment was that I become familiar with the extant literature prior to determining a research problem. I then had to attempt to minimize this prior knowledge of existing theories during data collection and analysis. This was done via the use of unstructured focus groups prior to conducting the individual interviews described above. This data collection technique is now discussed within the context of this research and in some detail as it is still not commonly used within the IS discipline.

4.3.1.1 Focus Group Definition

A focus group is a small, formal, temporary group of people brought together for the purpose of collaborative discovery within a given theme (Greenbaum 2000; Morgan, D.L. 1997; Templeton 1994). Groups are normally between 6 and 10 people (Cunningham, Young & Lee 2000; Greenbaum 2000; Morgan, D.L. 1997; Stewart & Shamdasani 1990) but can consist of either less than or more than these numbers (Fern 1982; Napolitano et al. 2002). Focus groups rely on the dynamic interaction of participants to discover and then discuss issues of interest to both the researcher and the group (Morgan, D.L. 1997; Morgan 1998; Stewart & Shamdasani 1990).

4.3.1.2 History of Focus Groups

The first recorded use of focus groups in social research appears to be that of Bogardus (1926). They were then used during the second world war (WW2) to evaluate the effectiveness of propaganda, training manuals and work groups by Lazarsfeld and Merton (Berg 1998; Morgan, D.L. 1997; Stewart & Shamdasani 1990). Merton, Fiske & Kendall published “The Focused Interview” in 1956. This sold a few thousand copies and went out of print (Berg 1998). Focus groups were then

used post WW2 for market research, primarily as a result of the work of Lazarsfeld (Fern 1982; Hines 2000; Morgan, D.L. 1997; Stewart & Shamdasani 1990; Templeton 1994). Post WW2, the use of focus groups virtually disappeared within the social sciences (Berg 1998). Morgan hypothesizes that this may have been due to the work of Merton and others who specifically limited their use to gauging the reaction of participants to stimuli such as films, radio and manuals (Morgan, D.L. 1997). It has also been argued that it may have been due to the different groups using focus groups (social scientists and marketers) not developing a shared language and not agreeing on what the outcome of focus group research should be. Marketing had the impetus and financial backing and took control of the technique (Templeton 1994).

Most focus group research from 1970 – 1990 appears to have used the technique primarily for convenience “... either groups allowed more individuals to be reached at once or groups were where the participants were most likely to be located.” (Morgan, D.L. 1997, p. 5). This may be the reason focus groups are still seen by many researchers as an “easy” method whose rigour is questionable. A second reason why they may be seen as quick and easy is that their focus means that a researcher can, compared to individual interviews, quickly collect large amounts of data specific to the research question (Morgan, D.L. 1997, p. 13). In the late 1980’s and early 1990’s a number of books describing focus group research, especially in medical research books, reintroduced the method to the social sciences (Blackburn & Stokes 2000; Fern 2001; Morgan, D.L. 1997). This has led to the legitimization of the focus group method in the social sciences since the early 1990’s (Berg 1998).

4.3.1.3 Focus Groups in Social Research

There are commonly two types of research task using focus groups: theoretical research involving testing or developing theory; and applied research conducted for decision making purposes, often marketing decisions (Fern 2001). Discounting the latter, there are then three main uses of focus groups in social research: *self-contained* study where they are the principal method of data collection; *supplementary source of data* in studies that rely on another primary source of data collection, and; *multi-method studies* where there is no primary method of data collection – focus groups are as important as all the other methods (Morgan, D.L. 1997). When used in multi-

method studies, focus groups are used in conjunction with interviews and other data collection methods usually in ethnography. Each method contributes to the overall understanding of the phenomenon under consideration. The relative importance of focus groups depends on data needs, access to resources and participants, and research design (Cunningham, Young & Lee 2000; Fontana & Frey 2000; Morgan, D.L. 1997).

Focus groups must be consistent with the objectives and purpose of the research (Stewart & Shamdasani 1990, p. 12). An example given is that in an exploratory study, one or two initial focus groups could be used to get a feel for the issues involved. These, then, can be used to form the basis of individual interview questions (Morgan, D.L. 1997; Stewart & Shamdasani 1990). This mirrors their use within this research as they were used to gain an understanding of participants' alignment issues rather than those raised within the literature. These were then used to inform the following individual interviews. In this role they contributed significantly to the overall direction of the research and are therefore very firmly a part of a multi-method approach.

4.3.1.4 Focus Groups compared with Individual Interviews

When compared to individual interviews focus groups rely on group interaction and, because of this, it is easier to identify differences of opinion, attitude, beliefs etc. However, the reliance on group interaction means that “... *individual interviews have clear advantages over focus groups with regard to (a) the amount of control that the interviewer has and (b) the greater amount of information that each informant has time to share. By comparison, focus groups (a) require greater attention to the role of the moderator and (b) provide less depth and detail about the opinion and experiences of any given participant*” (Morgan, D.L. 1997, p.10). These points are supported by other researchers (Greenbaum 2000; Palmerino 1999; Stewart & Shamdasani 1990). Depending on the design of the focus group session individual interviews may be easier to moderate. They may also be more flexible as it is easier for the moderator to change the topic of discussion (Greenbaum 2000). A related issue is that members of a focus group tend to become more involved in the topic (Greenbaum 2000). A combination of these two features became apparent in the first alignment focus group conducted in this research when a moderator attempted to

change the topic. Members provided a very brief answer then returned to their original discussion.

Although individual interviews generally provide much more depth of material at the cost of time (Palmerino 1999) there are some situations where focus groups can provide more detail. These entail situations that are poorly understood, have not been previously thought about by participants, or are value and attitude laden (Morgan, D.L. 1997) all of which were pertinent to the current research. However, there appears to be little difference in the number and quality of ideas generated by either a focus group or a series of individual interviews involving the same number of participants (Stewart & Shamdasani 1990).

4.3.1.5 Design of Focus Groups

The output from a focus group is very much dependent on the design and planning of the series of sessions. A major concern within the current research was to minimize the influence of the a priori knowledge of the researcher. It was therefore important to allow participants to discuss those issues of importance to themselves rather than directing the discussion. The choice of participants could also be important to the results of the sessions.

4.3.1.5.1 Group Size and Make-Up

Most focus group texts recommend between six and twelve participants per group but there has been little research on the affect of group size on research outcomes. It has been shown that when participants are interested in the topic, and are therefore motivated, groups with as few as three participants can be very effective (Morgan, D.L. 1997; Morgan 1998; Napolitano et al. 2002). This is often the case when professionals and/or managers are involved in a session related to their work. This was the case with the current research.

Additionally, it has been noted previously that whilst it may not be difficult to get managers to commit to a focus group session if it is of interest to them, it may be difficult to get them to turn up at the session due to their other commitments (Blackburn & Stokes 2000; Morgan, D.L. 1997). This proved to be the case with this research. In one instance a number of planned sessions were aborted due to managers

withdrawing prior to the session date. Eventually the decision was made to conduct the session with whichever of the invited managers turned up. This led to a situation where one session was held with only three participants.

The focus group literature also recommends that groups should be homogenous as far as backgrounds and attitudes are concerned (Morgan, D.L. 1997; Morgan 1998). This limits the possibility of destructive disagreements occurring during the session.

Additionally, as it is impossible to recruit a representative sample, the selection of group members should be purposive – they should be able to provide as wide an experience of the phenomenon under study as possible.

As previously noted, most research into IS/business alignment has been conducted at the CIO and CEO level with most research only addressing the actions of CIO's. To meet the recommendations for focus group research, above, and the needs of the current research focus group participants were chosen carefully.

Three focus group sessions were held. The first consisted of six senior IT managers from various organisational backgrounds. These included both local and multi-national organisations. The managers were mostly line managers rather than CIO's but were from various hierarchical levels within their organisations.

The second focus groups consisted of three business managers. One of these was the managing director of a medium sized confederated Australian business, another was a senior line manager within the Australian branch of a multi-national consumer products manufacturer whilst the third was a senior line manager of a large Australian telecommunications organisation.

The third focus group again consisted of six IT managers from various organisations representing both Australian and overseas interests.

As predicted in the literature there was not a problem with the small size of at least one of the groups. Members of this group were able to continue relevant discussion for very nearly the same period of time as the larger groups.

Details of group members is shown at Appendix A.

4.3.1.5.2 Number of Groups

The number of focus groups held is dependent on both the research design and the attainment of saturation of concepts and issues (Morgan 1998; Stewart & Shamdasani 1990). In this research the focus groups were one of a number of methods used to collect data. They were being used primarily to minimize the effect of a priori reading by the researcher. The research design called for their use until the core problem of subjects could be identified. They were also used to identify the range of issues that managers thought either enabled or inhibited alignment. The issues surrounding the core problem would then be investigated in more depth during individual semi-structured interviews.

4.3.1.5.3 Group Structure

Focus group sessions can be conducted in many ways from highly structured to unstructured. There are advantages and disadvantages in these extremes.

The choice of a more structured approach is usually associated with a strong, pre-existing agenda for the research, where considerable knowledge of the topic is already held by the researcher. Standardized questions will allow the exploration of specific topics, whilst high moderator involvement maintains that focus (Fontana & Frey 2000; Morgan, D.L. 1997; Morgan 1998; Stewart & Shamdasani 1990)

Less structured groups are more suitable for exploratory research. Another aspect of low structure focus groups is that it tends to “... *effectively eliminate the researcher’s perspective from the resultant data*” (Berg 1998, p. 104). Low moderator involvement, and a few open ended questions, will allow the discussion to cover areas of interest to the participants, so allowing the facilitator to learn about the research area and open up new areas for future investigation (Blackburn & Stokes 2000; Morgan, D.L. 1997; Morgan 1998). This was the objective of the focus group sessions planned for this research.

The focus group sessions in this research were, therefore, unstructured. Participants were given instructions on how to self-manage the session prior to commencing (Morgan, D.L. 1997). Each session was then provided with two questions to discuss:

- What do you understand by the term IS/business alignment?

- What, in your experience, are the three most important enablers and inhibitors to alignment?

The facilitator, myself, then took no further part in the latter two sessions. In the first session some additional questions were asked towards the end of the session to gain elaboration on points that the group had raised during the session. Therefore I had no control on the topics discussed, the depth of discussion or the involvement of individual group members. However, as suggested in the literature, gaining input from these interested professionals did not present a problem – they were all highly involved as they had an intrinsic interest in the topic area (Morgan, D.L. 1997; Morgan 1998; Napolitano et al. 2002).

The sessions were terminated when participants indicated that they did not have anything further to add. This normally occurred after 1.5 to 2 hours.

A disadvantage with unstructured sessions is that each group may focus on different aspects of the research area providing limited, or no, consistency between groups (Morgan 1997, p. 39-42; 1998). This was of minimal impact in the three sessions held as the issues raised in each session were remarkably similar even across IT and business manager groups. The core problem that was identified as a result of analysing the data from these sessions was consistent across business and IT managers. The focus of individual interviews was then the determination of how IT managers resolved that problem. For this reason very few business managers took part in the individual interviews.

The experience gained in this research indicates that the use of focus groups is an appropriate technique to minimize the impact of a priori reading and experience in a grounded theory study. It is recommended to other researchers faced with this situation.

The focus groups also showed the consistency of the core problem across all managers when they consider alignment.

The focus groups were conducted as the first data collection effort. The recordings were then transcribed and analysed. The analysis was then used in the development of the interview instrument used for the initial individual interviews.

4.3.2 Interviews

The primary method of collecting data during this research was via semi-structured interviews. A major purpose of the individual interviews was to determine the response of IT managers to the core problem of alignment identified during the focus groups. Therefore, few business managers took part in these interviews.

The form of the individual interviews is now described.

4.3.2.1 Semi-Structured Interviews

Individual interviews were of the semi-structured, or semi-standard, type (Berg 1998; Dey 1999; Fontana & Frey 2000; Kvale 1996). This allowed a compromise between the formality of structured interviews that capture “*precise data of a codable nature in order to explain behavior within preestablished categories*” (Fontana & Frey 2000, p. 653) and totally unstructured interviews where subjects may discuss anything of interest to them and where emphasis is on understanding by the researcher rather than explanation (Fontana & Frey 2000). The use of semi-structured interviews kept the discussion within the scope of the research problem but did not impose any a priori categorization that may have limited the field of inquiry (Fontana & Frey 2000, p. 653). This is consistent with the grounded theory methodology where the substantive theory that is developed must accommodate all variation of data and behaviour (Fernandez 2004).

As predicted by Dey (1999) the initial interviews tended to be less focused, becoming more focused as the substantive theory emerged from the data. This also meant that the interviews tended to become shorter with later interviews often being about 40 minutes in length compared to up to 2 hours for early interviews. This implies that there was not a standard interview instrument. There were some common questions (What do you understand by the term alignment? In your experience, what are the three major inhibitors and enablers to alignment?) but the remaining questions were developed to investigate specific areas or contexts of alignment identified in previous interviews. Samples of interview instruments are provided at Appendix B.

4.3.2.2 Selection of Subjects: Theoretical Sampling

An evolving interview instrument also meant locating subjects who could provide insights into these more specific questions, a practice known within the grounded theory methodology as theoretical sampling (Fernandez 2004). That is, the selection of subjects was purposive (Glaser 1998; Morgan, D.L. 1997) and is dependent on analysis of previous data and the needs of the emerging theory (Glaser & Strauss 1999). No attempt was made to provide a statistically valid sample of subjects that would represent the whole population of people involved in achieving IS/business alignment. This is consistent with both interpretive research (Crotty 1998) and the grounded theory methodology (Glaser & Strauss 1999).

4.3.2.3 Theoretical Saturation

Interviews were conducted until theoretical saturation was reached. In theory this is when no new conceptualizations are emerging from the interview data, no new properties of categories are being uncovered, no new relationships between categories are being discovered and where the substantive theory can explain all variations within the data (Dey 1999; Urquhart 2001). In practice it is difficult to reach this situation – we can always move to finer grained analysis (Dey 1999). In line with a suggestion by (Dey 1999) data collection continued until analysis provided a sufficient understanding of categories, their properties and relationships and until no new conceptualizations were emerging. There are two issues that arise with this tactic:

- Further data collection may have, indeed, uncovered new conceptualizations (Dey 1999)
- There are known instances within the theory described here where category properties have not been fully developed. However it is believed that this will not affect the validity of the overall theory which must, in any event, be modifiable to accommodate new data as it becomes available (Glaser 1992, 1998; Glaser & Strauss 1999).

Although the grounded theory methodology calls for theoretical saturation it can never be known with any certainty when this condition has been achieved (Dey 1999). Therefore a pragmatic decision must be made to stop data collection. This occurred

when no new conceptualizations had emerged in the last 4 interviews and when categories and their properties and relationships were sufficiently developed to support the emergent theory. In this research it was the development of category properties that was the critical issue, not the identification of new conceptualizations.

4.3.2.4 Recording of Interviews

A number of very experienced grounded theorists (including Dick 2002; Glaser 1998) recommend that interviews not be recorded. Arguments include that a recording device can inhibit subjects' responses (Schultze 2000) and produce unnecessary volumes of data (Dick 2002; Glaser 1978). The latter view is that the researcher should be able to hold up to twenty separate concepts in memory whilst maintaining rapport with the subject (Dick 2002) and it is these concepts that are the building blocks of a grounded theory, not volumes of data (Glaser 1978).

In this research subjects were specifically requested not to identify themselves, other parties or their organisations prior to the interview commencing. This was done to comply with ethics requirements, however it also may have had an affect on subjects' willingness to discuss what could have been sensitive issues. I was unable to detect any hesitancy by subjects to discuss particular issues. The non-personal nature of the questions asked of subjects may also have helped in this regard.

It has also been argued that not recording interviews could be a high risk strategy for doctoral research (Dick 2002) as an audit trail of evidence is then missing.

For these reasons the decision was made to audio record all interviews including the focus group sessions.⁹ These were then transcribed by the researcher rather than having them professionally transcribed. In a number of instances the tone of voice used by subjects provided different interpretations than may have occurred if only the transcript had been analyzed. It is believed that the extra work involved in personally transcribing the interviews was worth the effort.

⁹ Analysis of the recorded, transcribed interviews revealed many more concepts than I remembered during the interview. My experience indicates that a student researcher is unlikely to remember important concepts raised during the interview as well as manage the interview and build rapport with the subject.

4.4 Analysis

This section covers issues of analysis not already discussed earlier.

4.4.1 Coding

The open coding used in grounded theory is very similar to the coding used in much other interpretive research (Coffee & Atkinson 1996) with both relying on the sensitivity of the researcher to the text. However the granularity of coding must be carefully considered. Course grained coding where a sentence or paragraph may be associated with a single code allows the identification of major themes or concepts and a very rapid understanding of subjects concerns and problems. Disadvantages of this granularity of coding is that the coding may be too crude leading to vague analysis lacking in detail and the missing of important concepts (Coffee & Atkinson 1996) or a “... *thin theory with rich but dubious relevance and the feeling that much has been left out*” (Glaser 1978, p. 58). Conversely, coding too finely may lead to an overabundance of codes from which little sense can be derived.

Most grounded theory writers advocate coding line by line (Charmaz 2000) or, at the sentence level (Dick 2002). The argument is that by coding at this fine level of granularity it is less likely that a priori assumptions will be allowed to influence the coding (Glaser 1978) thereby ensuring an inductive theory developed from the data.

The initial texts collected in this research were subjected to both coarse grained analysis then line by line coding. Using this technique it was possible to quickly identify the major concerns of participants and so increase theoretical sensitivity (Glaser 1978). Once I had become familiar with the major themes within early texts they were re-coded line by line. Later texts were only coded line by line.

Some grounded theory texts maintain that as a theory emerges later texts can be coded only for those codes that are relevant to the emerging theory. This reflects the improving theoretical sensitivity of the researcher and is known as selective coding (Glaser 1978). It is related to selective sampling. Data sources are selected and subsequent analysis of texts use selected codes that focus on the core category (the major problem or issue of participants) and the substantive theory that are emerging. This, however, assumes that the core category emerges reasonably quickly. This may

not be the case for student researchers or those unfamiliar with the method (Hughes & Jones 2003) and was definitely not the case within this research. I was not convinced of the identification of the core category, strategy ambiguity, until after analysis of the three focus groups even though it emerged from the very first interview and tended to guide data collection from there on. For this reason selective coding only occurred in analysis of the last interview collected during the research.

4.4.2 Memos

The major objective of the grounded theory method is to generate substantive theory (Glaser 1978, p. 84). An important enabler of the development of a substantive theory is the writing of memos during data analysis. Glaser (1978) argues that although much social research, as this thesis is, is aimed at providing a rich description of a situation, in grounded theory “... memos are aimed at **raising** that description to a **theoretical level through the conceptual rendering of the material**” (p. 84, emphasis in original).

Glaser argues that the researcher should stop analysis whenever a thought or idea is generated. That thought, idea or conception must be documented immediately otherwise it will be lost. The form, grammar, spelling, construction of the memo is unimportant. The objective is to capture the thought or idea or, in Glaser’s terms “*the point of memos is to record ideas, **get them out**, and the analyst should do so in any kind of language – good, bad or indifferent*” (1978, p. 85, emphasis in original).

As discussed in the next section, computer aided qualitative data analysis software was used during this project. The software used was NVivo from QSR. One of the advantages of this software is that it allows memos to be written whilst coding. These memos can then be stored with the transcript/analysis document but printed and sorted separately. Some of the memos written in this way are included in the following chapters that present the theory developed from my data. I have also included other examples in Appendix E.

One of the objectives of this project was to investigate alignment from a systems perspective. Therefore the connections between all the variables uncovered from the data were important. I found that writing memos did not allow me to easily document the connections that I was uncovering. I therefore started to draw models and using

these models as memos. An example is provided at Figure 5.2 in the next chapter. In most instances these models represented my developing awareness of the overall situation and increased my sensitivity to the developing theory and the relationships between variables. They allowed me to see the entire system as I conceived it at the time of drawing the model. This was important to my understanding. Generally the models were drawn by hand then, in many instances, transferred to a computer program some time later. The computer programs used for this task were primarily Microsoft Visio or the free academic version of Vensim PLe. The latter is a system dynamics modeling tool that allows the easy drawing of causal-loop diagrams. Examples of some of the models produced during analysis are included in Appendix F.

As predicted by Glaser (1978) the memos produced during analysis were used extensively during the write-up of this dissertation. They documented in an easily retrievable form the development of my conceptual understanding of the alignment system. That is, they contributed greatly to the theory presented here.

4.4.3 Use of Computer Assisted Qualitative Data Analysis Software (CAQDAS)

The use of computer assisted qualitative data analysis software is now generally accepted within qualitative/interpretive research (Thompson 2002). However, computers can be used in a variety of ways from simple text-retrieval systems to systems that allow coding and the management of codes to those that also assist theory development (Morison & Moir 1998). Although there have been arguments that the use of a computer during qualitative data analysis may inhibit the creative development of theory (Coffey, Holbrook & Atkinson 1996; Welsh 2002) there are just as many arguments that the use of computers actually result in better analysis as searches are more accurate and return **all** instances of text meeting the search criteria, not the first one that happens to be sufficient for the purpose (Welsh 2002). I am not going to become involved in this type of argument. There are other issues that I encountered whilst using a CAQDAS (NVivo from QSR International Pty Ltd) during this research that need to be explored.

Firstly, I am familiar with the use of computers. Learning another computer program was not a daunting prospect.

The first major issue that I encountered was that, as a student researcher, I was unfamiliar with both the software and coding in general. Initially I attempted to code my texts exclusively with NVivo. I was most uncomfortable with this. Within a short period of time I temporarily abandoned the computer as a coding aid and instead started coding manually. This was done line by line. Once I felt comfortable coding manually I then returned to the use of NVivo. I discovered that this is not unusual with a number of authors reporting a similar reaction for both experienced and novice researchers (Webb 1999).

An advantage of a CAQDAS is that it allows the easy retrieval of all instances of a code. In the case of NVivo each instance of a code in these printouts also includes details of the document in which it occurred as well as the paragraph number.

Webb (1999) says that a criticism of CAQDAS is “...*a fear that the context of the data will be lost if the researcher begins to work exclusively on the codes in isolation from the text, so that the codes become ‘reified’ or appear as thing in themselves*” (p. 325). This removal of codes from context was a major issue for me. I overcame the problem with a number of techniques. Firstly, I tended to make a number of passes of a transcript when coding. During the initial pass I tended to code whole phrases, sentences and even paragraphs to a particular node (NVivo’s terminology for what is normally referred to as a code). These represented major concepts within the text. Then, when printing out all instances of a node I was able to see the context of these concepts.

During a second coding pass of a document I coded line by line as recommended in many qualitative analysis texts (Coffee & Atkinson 1996; Strauss & Corbin 1990). This resulted in codes without context when printing reports for a particular code. I then made use of the feature in NVivo previously mentioned. It includes the document name and paragraph number for each instance of a code. When analyzing data and building the theory presented in this dissertation I went back to the original document to investigate the context in which that code instance was located. This was simple as I had already printed every transcript with each paragraph numbered. This feature is

also available within NVivo. Context was extremely important to me. I made sure that I did not work on codes in isolation from their context as feared by Webb (1999). However, this did mean additional manual work as not everything was accomplished within the CAQDAS. For me, it was a worthwhile trade-off.

Then, as my sensitivity to the data increased and I became aware of the importance of some codes I tended to re-visit earlier transcripts and recode for particular codes. This is an example of theoretical coding (Glaser 1978). I discovered that this practice of multiple coding passes of each transcript as described here is not uncommon in grounded theory studies (Charmaz 1994, p. 99).

A by-product of this tactic was that many pieces of transcript could be, and often were, coded to different nodes. Some examples of this are given in Chapter 6 when the analysis of coding is first presented. I spend some time at that point describing the coding and analysis of text in an attempt to demonstrate rigour and improve confidence in the conclusions I have made. This addresses some of the concerns of authors such as (Thompson 2002) regarding demonstration of rigour in arriving at conclusions during interpretive research.

A feature of many CAQDAS, including NVivo, is that it allows the structuring of codes. However, this structuring is normally hierarchical (Webb 1999; Welsh 2002) and is often used to imply a causal relationship between these codes/categories. As previously mentioned I coded using the interactive family of codes (Glaser 1978, p. 76) which does not assume a hierarchical structure. I therefore did not use the structuring ability of NVivo during analysis. Rather, I tended to draw models of my understanding of connections between codes. An example of one of these is given at Figure 5.1. It was not until analysis was complete that I used the structuring feature within NVivo to show categories and their properties (sub-categories and codes). There is no implication of any causal relationship within this structure.

That is, in this research a CAQDAS was used to assist in the management of coding. I could code easily within NVivo and used 'coding stripes' to see all the codes that were attached to a particular text. I then printed reports of all instances of each code used within the analysis. However, the analysis of these codes was then conducted

manually. This tactic overcame many of the criticisms of the use of a CAQDAS in qualitative research.

4.5 Summary

This chapter discussed the methodology, grounded theory, used within this research project. As part of that discussion special mention was made of the use of unstructured focus groups the analysis of which informed the implement used in individual interviews. The use of these focus groups minimized the effect of prior literature reading on data collection and analysis. This overcame a conundrum faced by many students using the grounded theory method – the need to comply with supervisors instructions to conduct an extensive literature review prior to the commencement of data collection and the conflicting requirement of the grounded theory method not to conduct such a review as it may bias results.

The design of the research called for data to be initially collected from both business and IT managers during unstructured focus groups. Analysis then showed that the core problem of alignment, strategy ambiguity, was consistent to both sets of managers. The research strategy was then to use individual interview to investigate how IT managers resolved this problem. For this reason very few individual interviews were conducted with business managers.

5 Strategy Ambiguity: *The Problem of Alignment*

5.1 Abstract

This chapter introduces the research, providing an overview of the substantive theory developed. It defines both alignment and strategy and compares the definitions of alignment provided within the literature to those supplied by participants of this research. This indicates that many practitioners, especially those at lower levels of an organisation, utilise a different scope when contemplating alignment to that used by researchers.

It is argued that the definition of strategy in use by most prior alignment research is but one of a number of identified definitions. This results in a rather simplistic view of strategy alignment that does not reflect the complexities faced by the participants of this research.

The variances in these definitions are then used to help explain the core concern, or problem, of the participants. This is identified as strategy ambiguity – the difference between the official business strategies promoted by an organisation and those that IT managers can see actually being implemented. This, then, presents IT managers with a dilemma – do they support the official business strategies or those actually being implemented?

Various factors within an organisation tend to constrain an IT manager's ability to understand business strategies and the actions they can then take to promote strategy alignment. Although these variables are connected in a web of influence, for convenience I separate them into the locus of control and locus of comprehension. IT managers then tend to adopt one of two responses when faced with strategy ambiguity and the constraints of the variables contained within the locus of control and locus of comprehension. They can either attempt to form relationships with their business peers to support these peers in their objectives; or they can withdraw from the

business and concentrate on the technology. That is, when confronted with strategy ambiguity and the factors affecting their ability to comprehend a complex situation and then take action, IT managers can adopt either a collaborative or technological response.

These loci and responses are briefly described in this chapter before being more thoroughly examined in the next three chapters. In doing this I present an overview of the substantive theory developed during this research.

5.2 General

Both business and IT managers have been identified separately in the next few chapters in an endeavour to make reading easier. An alphanumeric system has been used. M or T identifies either a business (manager) or IT (technology) manager respectively. The following digit identifies individual managers. The details of these managers can be seen in Appendix A.

Codes, categories and variables within the analysis are shown in *italic boldface* font. Quotes by research participants are shown in *italic*, with long quotes indented from the remainder of the text. Paragraph numbers at the end of quotes identify the paragraph(s) within the transcript that contains that quotation.

5.3 Definition of Alignment

Reich and Benbasat (2000, p. 82) have defined alignment as:

... the degree to which the information technology mission, objectives, and plans support and are supported by the business mission, objectives and plans.

They then differentiate between the intellectual dimension of alignment –

“...the state in which a high-quality set of interrelated IT and business plans exists” (p. 82) –

and the social dimension of alignment –

“...the state in which business and IT executives within an organisational unit understand and are committed to the business and IT mission, objectives and plans” (p. 82).

These typical definitions all emphasize a wide organisational scope of alignment.

They also emphasise actions at the executive level of an organisation.

Many of the participants of this research expressed a different view of alignment where the scope of alignment appears to be dependent on their position within the organisational hierarchy. M3 defined alignment as:

an end state where the other people around you working with you have a common agreed direction or agreed approach (para. 84)

Emphasis here is on ‘the people around you’ together with the concept of ‘a common agreed direction.’ It should also be noted that all these definitions assume alignment is an end-state, not a process. It has been argued that although this is the dominant perspective within alignment research it may not be defensible (Ciborra 1997; Maes et al. 2000). Another definition, provided by T10, was:

IS and business are thinking along the same levels, and they’re communicating, and they trust each other (para. 8).

By itself this definition does not indicate a localised view of alignment. But the participants of this research indicated that communication and trust developed between peers who were located at similar levels within the organisational hierarchy. This is consistent with the trust literature (Lewicki & Bunker 1996). As IT managers are working with their peers, it can be interpreted that the scope for alignment they employed is determined by their position within the hierarchy. CIO’s tend to have an organisational view, whilst lower level managers tend to restrict their view of alignment to what is happening in their particular area. An example of this was

provided by T7 who works for the regional office of a multi-national consumer goods manufacturer. Her CIO is responsible for the IT function within 13 autonomous country branches within the South East Asia region. T7 was asked whether her CIO consciously works to establish alignment. Her response was:

Consciously works to establish alignment to business strategy for the region – definitely. Consciously works to establish alignment to global strategic business plan – not as definitely (para. 86).

Contrary to recommendations in the IS literature, gaining alignment seems not to be a collaborative activity between IT and business. T4 summarised a discussion on this topic that occurred in the third focus group thus:

... my perception, that it's IT that needs to run around and get themselves aligned with the business. And if they do, they're good. If they don't, they're bad. But it's never the business that says, that tends to drive it and get the IT alignment (para. 22).

This view was supported by T2, the CIO of a large consumer goods manufacturer:

Understanding what they're [the business unit] trying to achieve and showing that you're actually working towards that end (para. 48).

It could therefore be interpreted that in contrast to the literature these managers:

1. Appear to employ a narrower scope of alignment, concentrating on actions at their own level. This level is defined by their position within the organisational hierarchy.
2. Believe that alignment is not a collaborative endeavour between business and IT. It is more likely that IT personnel are attempting to align their actions to support the goals and objectives of their business peers. This is contrary to recommendations in the literature (Teo & King

1996) but could be the result of the small sample of managers represented within this study. Earlier research indicates that only a small percentage (6.4%) of organisations are actually able to achieve a high degree of integration of IT and business plans (Teo & King 1997, p. 200). The level of integration of plans is often used as a surrogate measure for the level of alignment. It also appears that senior Australian business managers have considerably less interest in IT than their counterparts from other developed nations (Gedda & Pauli 2006a) and this may also impact collaboration between business and IT when attempting to achieve alignment.

3. Consider alignment to be primarily a problem of aligning business and IT strategies. I did not ask my subjects to define strategic alignment but to define alignment. It was their choice to limit discussion to alignment of strategies. This supports the tentative conclusion of Chan (2002, p. 109) that strategic alignment is of more importance than structural alignment.

Another observation is that virtually all of these definitions, from both the literature and participants, consider alignment to be a state rather than a process. In contrast Henderson & Venkatraman (1993, p. 230), Ciborra (1997), Luftman (2001) and Chan (2002) all consider alignment to be a process although Chan appears to have initially viewed alignment as a state (Chan et al. 1997). The substantive theory developed over the next three chapters indicates that strategic alignment is a process rather than a state.

To align their actions with their peers' goals and objectives IT managers need to understand what those goals and objectives actually are. It is usually assumed that these are contained within plans (for example, King 1988; King & Teo 2000; Lederer & Sethi 1988; Teo & Ang 1999), but both the management literature and subjects indicated that this may not be the case. The next section discusses this situation.

5.4 Definitions of Strategy

Mintzberg (1988) maintains that strategies are developed via five different methods, four of which are relevant to this research. These are strategy as: plan, pattern, position and perspective. The fifth, strategy as ploy, relates to a situation where a manager publicizes a "strategy" to confuse competitors but has no intention of implementing it. This definition is not considered here. The definitions of strategy presented here are paraphrased from Mintzberg (1988).

5.4.1 Strategy as Plan

This is the classic method of developing strategies as taught in most universities. It is a logical process where the vision, goals, strategies and then actions are developed within a formal planning process. A proponent of this method of strategy development is Porter.

5.4.2 Strategy as Pattern

Strategies emerge as a result of a stream of related decisions which may be made to combat changes in the organisation's environment or for other reasons. A difficulty with this form of strategy development is that it is extremely difficult to identify a strategy as it emerges. It is usually identified in hindsight. However, strategies developed this way can change the direction of the organisation.

5.4.3 Strategy as Position

This occurs when the organisation positions itself within a market. How does it differentiate itself within its market? Is it a low cost provider or does it target a particular niche, and if so, how?

This definition of strategy and strategy development is closely associated with strategy as plan.

5.4.4 Strategy as Perspective

This relates to the culture of the organisation and the mental models of those involved in developing strategies. The argument is that the strategies available to an organisation are actually limited by its history and culture. Is it a pacesetter, or does it perceive itself as a follower? Where does it perceive its strength to be? Mintzberg (1988) provides the example of IBM relying on marketing whilst Hewlett-Packard relies on its engineering expertise. An outcome of the current research is that some managers believe that IT can give them an advantage whilst others consider it simply as a cost centre. This will immediately limit the use of IT and determine whether it is invited to the strategic planning process.

All of the above indicates two issues that are important during the development of IT strategies, especially if an objective is strategic alignment:

It is quite possible, even normal, for intended strategies (strategy as plan) and emergent strategies (strategy as pattern) to exist at the same time. The implemented, or realized, strategies are a mixture of both. A related issue is that many intended strategies are never implemented, primarily as a result of a volatile, or dynamic, environment and not necessarily by failures with the development or implementation processes (Mintzberg 1987). Similarly, it is possible that a series of decisions, or experimentations, may not coalesce to form a pattern that can then be recognized as a strategy – there could be many unsuccessful decisions and experiments that are abandoned. Determining, at the time, the actual strategies that are being followed by an organisation could be extremely difficult. Simply, this can be summarized as realized versus espoused strategies. But it leaves IT managers with a dilemma – what are the business strategies to which they are attempting to align their actions? All of this was very eloquently summarised by one participant:

*I guess I would have to be asking the question 'alignment to what?'
So, if you're saying alignment to the law so if you used the planning
approach and you lay down the law over time more people will follow*

the law than not, then its probably the case. But the question then becomes 'how does the law get changed?' And who's informing the process on where the law needs to be changed? And that's the flaw. There's alignment between actions and the law, but you've also got to take into account the other piece which is alignment between the law and reality. And I think if you broaden your alignment to cover both ends of that, the more fluid approach actually has better long term alignment. So, yeah, you can get people following the law but the law is a dumb-arse thing that you're doing, so why are we doing it? In the hierarchical approach that sometimes is a very hard message to get back up to the people setting the laws (T1).

5.4.5 Strategies or Goals? What are we Investigating?

A final word must be added about the term “strategy” and its use by participants of this research. Nearly all participants used the terms “strategy” and “goal” interchangeably. This is reflected in their definition of alignment which most were asked to provide during interview. The replies to this question were almost identical: “Alignment is the business and IS working together to reach a common goal.” There is nothing about the vision and strategies that are mentioned in most academic definitions of alignment (Chan 2002; Luftman 2000; Reich & Benbasat 2000).

This confusion of the two terms may actually indicate a very deep problem in alignment research. Researchers concentrate on strategies – practitioners concentrate on goals in an endeavour to resolve immediate problems. As a result the latter may be short term and local in nature whilst strategies are implicitly long term in nature and relate, at minimum, to an entire business unit.

The substantive theory presented here must be understood within the context of participants' understanding of “alignment” and “strategy”.

5.5 The Core Problem of Alignment

A major task within the grounded theory methodology is the identification of the core category (Fernandez 2004; Glaser 1998; Urquhart 2001). The latter is essentially the

major problem of the participants within the substantive area. As mentioned in the previous chapter, and as will be explained in more detail here, this did not occur formally until later in the analysis of data even though the issue was raised from the very first focus group and was repeatedly raised in most other interviews from then on. The late formal identification of the core category probably had more to do with my research inexperience and a consequent hesitation in commitment rather than any real difficulty with its emergence. I was aware of its importance from the first day of analysis. This occurred within one week of the first focus group interview.

The first focus group consisted of six middle level IT managers from various organisations. Most of these organisations were the Australian branches of multi-national companies. They consisted primarily of consultancies and software development businesses.

The first question posed to these participants was “How, in your experience, is IS/Business alignment achieved?” The very first response to this question was:

Politics. People not talking to other people for some reason. I don't think there is any right reason for people not to talk to other people really, but in a business sense that is a huge limitation. Not working with that person because such and such happens. That's politics starting up and it just get worse from there (T13, para. 13).

Sections of this passage were coded variously as **politics**, **communication** and **communication barriers**.

Further analysis of this transcript indicated the importance of **communication** to the participants and, in particular, face-to-face **communication**. E-mails were seen as a **communication barrier**.

The importance of **communication** and **communication barriers** was raised in every subsequent interview. However, it was noticed in the following interviews, more so than in this first focus group, that **communication** was often associated with **understanding**. The question, then, was what were participants attempting to understand? The answer to this was provided in the first focus group and then

reiterated in other interviews. The first clue, although not identified at the time, was provided within Paragraph 31 of the transcript:

The situation is that our company's history has been in accounting practice management tools. The legal side, the legal practitioner's side, has been a recent acquisition in the past 12-18 months. But, all of their services, their processes, and everything are geared to that industry So much so that marketing happens for the accounting market. Now I'm not griping about this. This is just the simple fact. This is their comfort area. For instance the marketing group go to horrendous trouble to provide seminar material and things like that, that they arrange around Australia. And if you want to arrange something for the legal side of things, and there's no resources, there's no budget. Now that's... it's just a fact of life that we're working with. But it's a political situation. Our company actually elected to get into this [the legal market], and strategically from the top down, this is their biggest identified market for growth. The accounting side, they have 80-85 per cent market share, and so there's not a lot of opportunity for growth there. But, on the other side of the coin, trying to get some development happening... and there's 3 or 4 products on the legal side from the very top most ranks of the tier one – five thousand plus users and to our product which is sold to practitioners – so there are 5 tiers there. Our products cover all of those streams extremely well. We're still not getting any priorities. I'm not saying priorities, but even footing! That's the politics of the situation. So, besides from the fact that there's a corporate strategy to move forward politics are interfering with that. And its taken 18 months, and its still at baby crawl stage (T13, para. 31).

Because of the terminology used by T13 this passage was initially associated with **politics**. Although many other categories and codes were used during analysis the major issue identified here was that of **politics**. It was eventually realized that this was not necessarily the case. Other passages gave further insights.

Our CEO says our number one focus has to be customers, but no-one thinks of the customers. We've all identified that we've got this problem that we don't know what its like out in the real world for a lot of people, and here we are saying that our business strategy is "this" [customer focus], but no-one's doing anything about it (T14, para. 71).

And;

We deal with the representative of a business group regarding product "x". It's a business analysis and reporting tool and it just reports financial data. But the business rep that I'm dealing with is the financial analyst. He hasn't the slightest concern for all those other people out there who might use the tool just as a reporting tool. An example... the decisions he might make might impact those people, and he just says "I don't care." So he might make changes to the system that might have negative impact on the people downstream. And he says "Well, if they don't know how to use it, then they shouldn't be using the tool. If they can't cope with these..." And I'm thinking, now this is a user, right, who is supposed to be representing the business, but he's only representing his section of it. So, what you saying about silos – even within the business there are silos (T11, para. 116).

And again:

We've got branches, and we've got products we are trying to put out. New South Wales branch get in trouble for trying to work with Victoria or South Australia or Queensland branch to provide a focused info kit, or whatever, to clients or potential clients. If they're crossing those borders they have to really justify it. So there's bunker mentality. New South Wales branch against Victoria branch. I've come across this a lot in the last few months, and I'm just thinking it makes no sense. So, as far as IT and business alignment goes one of

the main inhibitors may well be divisions within the business as well, not just IT (T13, para. 113).

All of these passages, which are taken from the first focus group, have a common theme that is not immediately obvious. This is that the business strategies espoused by the organisations were either not being followed, being modified during implementation or implemented in a sub-optimal fashion. As far as the IT managers were concerned it created an ambiguous situation surrounding business strategy. Should they align to the official strategies or to those strategies that were actually being implemented? Whatever they did was probably going to be wrong in at least someone's eyes.

A second theme running through most of these passages is that of self-interest. The marketers know the accounting product. They can sell this with little effort and maintain their sales rate in the next quarter. Marketing the financial package will probably lead to a drop in sales in the short term while they learn the details of the package and learn how it should be marketed. Assuming that, like most marketers, they are paid by commission it is in their own short term self-interest to continue pushing the accounting package.

Similarly the financial analyst is asking for changes in the financial reporting tool that make his own job easier with little regard to other users.

Analysis of these, and other, passages identified two important categories: *self-interest*, and *competition* or *conflict*¹⁰. The latter refers to a leadership style that encourages competition between business units as a means of improving performance. An unanticipated consequence of this ploy is that each of these units will then pursue IT improvements and projects with little thought about the effect on other units thus increasing the ambiguity faced by the IT group.

The category *ambiguity* did not emerge from this initial focus group interview. I knew that something was going on but was not sure what it was. None of my participants have ever mentioned the word ambiguity in relation to organisational strategies. By

¹⁰ Initially both *competition* and *conflict* were used for very similar concepts. Eventually they were both subsumed to become a property of the Leadership Style category which in itself is a property of the major category Locus of Control. See Figure 5.3.

the second interview I understood that this was a major concern of all participants. At this stage the transcript of the first focus group was re-analyzed to identify other instances, such as those given above, of strategy ambiguity. Once I became sensitized to this concept it became obvious that there were references to it everywhere throughout all transcripts.

The question, then, was why was this ambiguity occurring? My earlier discussion of the definition of business strategy provides clues. The passages above also give clues – the self-interest of actors, and the leadership style of senior management. Each of these is now discussed.

5.5.1 Self-Interest

Self-interest arose as an issue from the very first focus group session and was then evident in every subsequent focus group and interview. In most instances it arose naturally within the conversation of the interview subject, but in some instances I probed the issue in more depth. This revealed that self-interest was involved in nearly all decisions made by business managers, even those in organisations which participants indicated had a very high level of alignment.

Initially I viewed self-interest negatively and as a destructive influence. This was due to comments such as those below taken from an early individual interview:

There are examples of other organisations where I couldn't identify a rational strategy. And there were things happening where maybe you call them strategies, but they were more around the interests of the senior managers of the company rather than one that you could map back to what the shareholders may have liked to happen (T1, para. 17).

The one example that really stands out in my mind it was very much a case of managing the perceived bottom line in order to shore up bonuses. It was as blunt as that. Things that should have been done to ensure the long term growth assets of the company were being pushed back because of "if I don't make this number this quarter I don't get

my cheque.” And even to the point of saying that in executive meetings, doesn’t bode well (T1, para. 29).

The self-interest one I would say to a greater or lesser extent was happening in all of those organisations, and we’re talking about 10 that’s the rough number, but it was really strong in 3 of those 10. Sometimes to the point of decisions that were clearly counter productive to the health of the organisation being made because they were in the interests of the people with the power to make the decisions (T1, para. 19).

In the latter passage T1 is describing his experiences in ten different organisations in which he has worked as either a senior IT manager or CIO.

Eventually I understood that the self-interest decisions and actions of managers were not necessarily negative – they are a totally rational response to the way in which managers and business units are measured and rewarded. In most instances decisions were being made to maximize measurements without regard to the effects on the remainder of the business.

I also eventually understood that, in most instances, the IT managers interviewed were not overly concerned with self-interest per se. Their concern appeared to be how these decisions were affecting the strategies that were being promulgated throughout the organisation. This, then, left IT managers with a dilemma – did they attempt to align their IT decisions with the formal business strategies or those modified strategies actually being implemented? In the instance where executive managers were optimizing their own bonuses whichever decision the CIO made was probably going to be detrimental to his or her career.

5.5.2 Leadership

Three main issues arose surrounding leadership and all of them related to the core category identified in this research. These issues were consistent across IT and business participants. They were: commitment, consistency of message, and whether leaders engendered either a collaborative or competitive business culture.

5.5.2.1 Commitment

This related primarily to the perceived commitment of managers to the promulgated business strategies and goals. The passages provided above in the section on self-interest are examples of this. The actions of senior management were at odds with the espoused strategies and interests of the firm reinforcing the ambiguity faced by IT managers when attempting to align business and IT actions. This is exemplified by:

If you followed the official strategy you actually failed. You did the wrong thing because it wasn't what the business wanted. But, often they weren't in a position to say what their strategy was. I mean no company is going to say 'our strategy is to fleece money out of the share market' (M3, para. 38).

5.5.2.2 Consistency of Message

This relates primarily to the consistency of the espoused strategy over time, and whether the message on how to implement that strategy was consistent.

M3 gave the experience of an organisation in which he had worked where the espoused strategies appeared to change every two weeks depending on the market value of the company. This rate of change made it difficult for business managers to cope and this then flowed on to IS managers.

Another example of an inconsistent message was given by T1:

If I tell you that this is a collaborative environment and my door is open, and when you walk in the door I slap you around. 'Why are you bothering me. It's a waste of my time!' That's an example of inconsistent message and that will piss people right off straight away (T1, para. 80).

This example not only indicates that an inconsistent message can create ambiguity but also has the potential to alienate the workforce.

T1 then elaborated further on the need for consistency of message:

There's consistency over time, however, in 'well this is the direction we're heading and now that's changed, and here's why its changed.'

People are a little more open to that sort of thing. OK, well I can understand why the world has changed. Or, maybe I don't understand why the world has changed but I can understand that we are changing. Its still not an easy thing to do as most people prefer that there's not that many changes but the consistency between saying and doing is the crucial one in terms of alignment (T1, para. 81).

5.5.2.3 Competitive or Collaborative Business Culture

Some leaders purposely encourage a competitive relationship between business units in an attempt to promote efficiency and performance. As part of this culture the performance of business units tends to be measured and compared. One result of this can be individual business managers asking for IT solutions that favour themselves or their units at the expense of other units. This just adds to the dilemma for the IT manager who is attempting to provide a whole of business solution. An example is provided in the earlier quote from T13 (para. 113) when he discussed the competition between the state branches of his organisation.

5.5.3 Espoused versus Enacted Strategies

The earlier discussion on the definition of strategy indicates that strategies are formed by various methods, not all through a logical reasoning process and then contained in plans. Espoused strategies may or may not be implemented for a variety of reasons. Similarly, they may be modified during implementation (Ciborra 1997, p. 72) partly because lower level managers may not be able to identify the espoused strategies (Lederer & Mendelow 1987). The IT managers suggested a number of reasons for this, including:

- changes in the business environment,
- the effect of competition between business units,
- the motivation and measurement systems in place in many organisations, and
- the mental models held by business managers.

When combined, these factors suggest that strategies to be enacted have certain characteristics. Yet the strategies within most business plans do not exhibit these characteristics. This suggests a central problem of alignment.

Strategies that are enacted:

- Have meaning to the person enacting the strategy. He must know what he has to do to achieve the strategic goal.
- Are conceptually simple. Many strategies are either visions or ‘motherhood’ statements such as ‘We will provide an industry leading service to our customers.’ The person enacting the strategy is entitled to ask ‘What does this actually mean in practice?’
- Usually relate to performance measures. These may relate to an individual or business unit (or both).
- Exhibit short term results. This is related to the previous characteristic. To enhance performance measurements, the results of any actions must appear in the short term.
- Do not require changes in a person’s work habits. Thus they should be simple to execute and not conflict with the manager’s current mental models about how the organisational system operates. They tend not to require additional knowledge from outside the manager’s functional area (Campbell, B.R. 2004).

An example of the latter characteristic has been supplied by Nordstrom & Soderstrom (2003) who conducted a case study of a Swedish forest industry corporation. Senior management attempted to implement a new vision for the organisation. One strategy selected to enable the new vision was the implementation of a SAP system. However both the IT developers and business users subverted the vision to their own need of continuing to work in their traditional ways. The result was an automation of existing work practices and processes.

Formal business strategies are often difficult to understand. They can seem ambiguous to business managers due to their conceptual nature. Additionally, factors within the organisation, such as the incentive and measurement schemes in place, tend to restrict the actions available to managers when attempting to implement strategies. Managers’

ability to comprehend a situation or their ability to take actions bounds the choices that are available to them when enacting strategies. The result is an ambiguous situation for IT managers where the strategies being implemented are often at odds with those contained within plans. This situation is exacerbated where a single IT unit is supporting a number of business units. In the words of T10:

We've a number of business units to support and we're sort of getting pushed in different directions. I haven't seen a single strategy document that dictates exactly what we are to do (para. 148).

The position of business managers within the organisational hierarchy can affect their actions. For instance the performance of senior executive managers is more likely to be tied to organisational performance, whilst the performance measures applied to lower level managers is more likely to be associated with their personal efficiency or that of the small business unit in which they work. A result of this enunciated by T1 is that actions at senior levels of an organisation are likely to be related to organisational goals (and long term benefits) whilst actions at lower levels are directed towards achieving short term efficiencies associated with personal or unit goals. This is known as goal displacement and is well documented in the business literature (Baker 1992; Kerr 1995; Robbins 1990, pp. 314-316). This, then, creates additional ambiguity for lower level IT managers who are working towards achieving the (efficiency) goals of their peer managers whilst often being aware of espoused business strategies and the actions of more senior managers.

As a result, IT managers are faced with a mixture of espoused and enacted strategies that are often in conflict. Resolution of this strategy ambiguity is a major problem. In grounded theory terms, *strategy ambiguity* therefore became the core category. The basic social process (Glaser 1978, pp. 93-115) that explains practitioners' actions in resolving ambiguity forms the substantive theory. As we shall see, the interaction of factors that I have grouped under two theoretical categories, the locus of comprehension and locus of control, to a large extent determine how IT managers react to strategy ambiguity.

5.5.4 The Core Category and Its Relevance

The first data collection exercises within this project were three focus groups – two consisting of IT managers and a third consisting of business managers. These focus groups were unstructured (Morgan 1998, pp. 43-53) with subjects being asked two questions: what do you understand by the term IS/business alignment and: what do you consider to be the enablers and inhibitors to alignment? The participants of these focus groups restricted their discussion of alignment to that of alignment of business and IT strategies. I did not limit, or guide, the discussion. It became obvious that strategic alignment was a major concern to both business and IT managers. As a result of analysis of the focus group transcriptions I specifically asked subjects of individual interviews questions regarding alignment of strategies.

The ambiguity that surrounds the difference between the business strategies that are being formally promulgated and those that are actually being enacted was the major concern of most people interviewed for this research. Although this issue became evident very early in the research it was not identified as the Core Category until after analysis of all focus groups. As mentioned previously this was probably due to my inexperience as a researcher and a concern that it may not be the “core” problem.

This ‘problem’ is not readily evident in the IS/Business alignment literature. Much of this literature is prescriptive in nature with an implicit assumption that the strategies espoused within formal plans are those that will actually be implemented. Hence a de facto measurement of strategic alignment is how well IS plans and strategies reflect, and are integrated with, those of the business (King 1988; King & Teo 2000; Teo & King 1996, 1997). This is despite the large amount of research within the business discipline that discusses the problem of emergent (realized) versus espoused strategies. Few papers investigating alignment explicitly recognize the difference between espoused and emergent strategies, exceptions being the various papers by Chan and others (Chan & Huff 1992; Chan et al. 1997; Chan, Huff & Copeland 1998) and Baets (1992) although European alignment researchers, such as Ciborra (1998) and Ward and Peppard (2002) appear to be cognizant of the issue.

The anomaly that exists in prior IS alignment research and highlighted within the current study therefore indicates the relevance of this particular issue.

The remaining sections of this chapter briefly explain how participants dealt with this problem by briefly describing the development of the substantive theory. It therefore provides an overview on which the more detailed discussion in following chapters can be based. Additional evidence to support the claims being made here will be provided in these following chapters. Various iterations of the emerging theory are shown in Figures 5.1-5.3.

5.6 The Substantive Theory: Resolving Ambiguity within Bounded Choices

The substantive theory developed over a number of iterations as understanding developed and theoretical sampling progressed. This is common in grounded theory research.

5.6.1 Early Iterations of the Theory

In dealing with strategy ambiguity IT managers constantly told me of the importance of communication and the development of relationships with their business peers. All of the managers, both IT and business, described how they attempt to develop relationships. Some of these managers are particularly pragmatic, identifying specific people with whom they need to develop relationships to obtain the information they need to make sense of their environment and understand what is going on. The term “understanding” was repeated often and became a code. Some managers described instances where they were not able to form a relationship with a targeted peer manager and then the tactics they implemented to get the required information. This usually involved targeting other sources of that information regardless of where those sources resided within the organisational hierarchy.

The interviews also highlighted many factors that affect the ability of managers to form these relationships. These include:

- the *invisibility of IS staff* to the rest of the business as the IT function is normally kept in a separate silo. This seems to mostly impact lower level managers.

- the ***ability of individuals to communicate***. A number of references were made to “typical IT people” who are unable or unwilling to communicate. However an inability to communicate is not restricted to IT personnel
- the ***history of IS/business relationships***. Where a history of poor relationships had developed it was difficult to instigate an individual relationship. This history also impacted the perception of the trustworthiness of the IS function as did the ability of the IS function to provide a basic IT service
- the ***attitude of the business to IT***. If IT was seen as simply a support function, or cost centre, IT managers found it difficult to instigate any meaningful relationship with their business peers
- ***shared domain knowledge*** and ***shared system of meaning***
- ***leadership style*** and whether this encouraged either a competitive or collaborative environment.

Many of the above issues are related. For example, the ***invisibility of IT staff*** impacts the ability to ***communicate*** and ***form relationships***. This then impacts the development of ***shared domain knowledge*** and ***shared systems of meaning***. Similarly, a competitive ***leadership style*** of the CEO, a poor ***history of IS/business relationships*** and an attitude that IT only provides a support function can lead to a situation where the IT function is made even more invisible.

All my early participants reported that they attempted to form relationships with business peers in an attempt to understand their situation and resolve strategic ambiguity. But they made occasional references to IT managers who were either unable or unwilling to form these relationships and instead concentrated solely on the technology. It also became clear that the development of relationships, or not, was occurring at all levels of an organisation and that the factors mentioned above were impacting this endeavour. So it is quite possible for managers at all levels of an organisation to attempt to form relationships with their peers but with different results.

During coding I became aware of relationships between many of the codes I was generating. This led to the development of the model shown in Figure 5.1 which was the first model of what I understood to be going on within alignment.

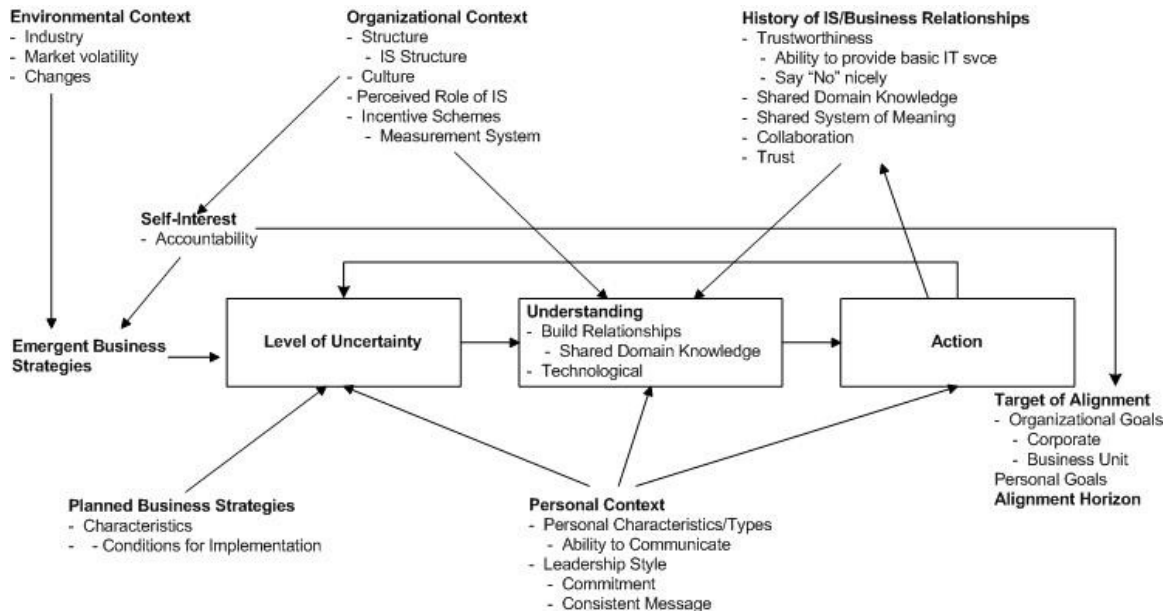


Figure 5.1. Relationships Between Codes Identified after Initial Open Coding

There are two relationships among codes in Figure 5.1 that have not been discussed but need clarification. Firstly, any actions taken by either business or IT managers in regard to their respective strategies will affect the *Level of Uncertainty* or strategic ambiguity (I had not identified *strategy ambiguity* as the core code at this stage). Secondly, and most importantly, is the effect of *self-interest* on the *target of alignment* and the *alignment horizon*. If IT managers choose to develop relationships with their business peers in a bid to resolve strategic ambiguity there is a high likelihood that the two managers will take actions in a collaborative manner. The business manager appears to take the lead role in which, and how, strategies will be implemented. As performance measures are normally targeted at individuals or business units this leaves the business manager with a dilemma. Does he implement strategies in such a way that will reinforce the corporate goals, or does he attempt to maximize his own performance according to the measures that are being applied? His decision, and the corresponding actions taken by the IT manager, will often determine the *alignment horizon*. If the business manager chooses to maximize the attainment of corporate goals there is every likelihood that alignment will be long term.

Conversely, a concentration on personal and business unit performance maximization often leads to short term alignment of local interests. If, as was described by one CIO, the objective is maximization of a CEO's remuneration package the result can be devastating for the business (T1).

The above scenario is enacted many times within an organisation, and with many IT and business manager pairs, resulting in confusion surrounding strategies and alignment.

The model shown in Figure 5.1 provides some understanding of the process of alignment but it does not represent a theory of alignment. In part the categories, the major headings in Figure 5.1, had not been brought to suitably high level of abstraction. I had also written in a memo regarding Figure 5.1 that:

One of the issues is that I can not think of a term/concept that adequately conveys what is happening in the 'Understanding' box. It is not all about Understanding – some IS managers do not try to understand, they just concentrate on the technology (Memo – Bounded Choice 30 Jan 05).

During the re-coding of a focus group interview I developed another relationship diagram directly from the data (Memo 19 Jan 05). As connections between codes were encountered in no particular order during the discussion I ended up with three diagrams. These were later combined (see Model 1 in Appendix F). However, I had two codes on separate diagrams labeled *scope limitation* and *functional isolation/attitudes*. I had made a note to myself that *scope limitation* in Diagram 2 is very similar in concept to *functional isolation/attitudes* in Figure 3 (within the memo). They both deal with the bounding of understanding and then action to one's local area (Memo 19 Jan 05).

When contemplating this note some 10 days later I remembered an informal conversation I had had with one of the subjects, a CIO (T1). We were discussing the IT strategic planning approaches described by Earl (1993) and that some of these approaches appear to be much superior to others. The CIO made the comment that in an organisational context you are not normally given a choice of planning approach – other factors within the organisation usually predetermine which approach is possible.

I already knew from my data that the choices available to IT managers are limited – some of the reasons have been discussed above. But, combining all of this I realized that the response of IT managers to strategic ambiguity is bounded by the choices they are able to make. This insight led to the development of the model in Figure 5.2.

Strategic Alignment: A System of Bounded Choices

30/1/05

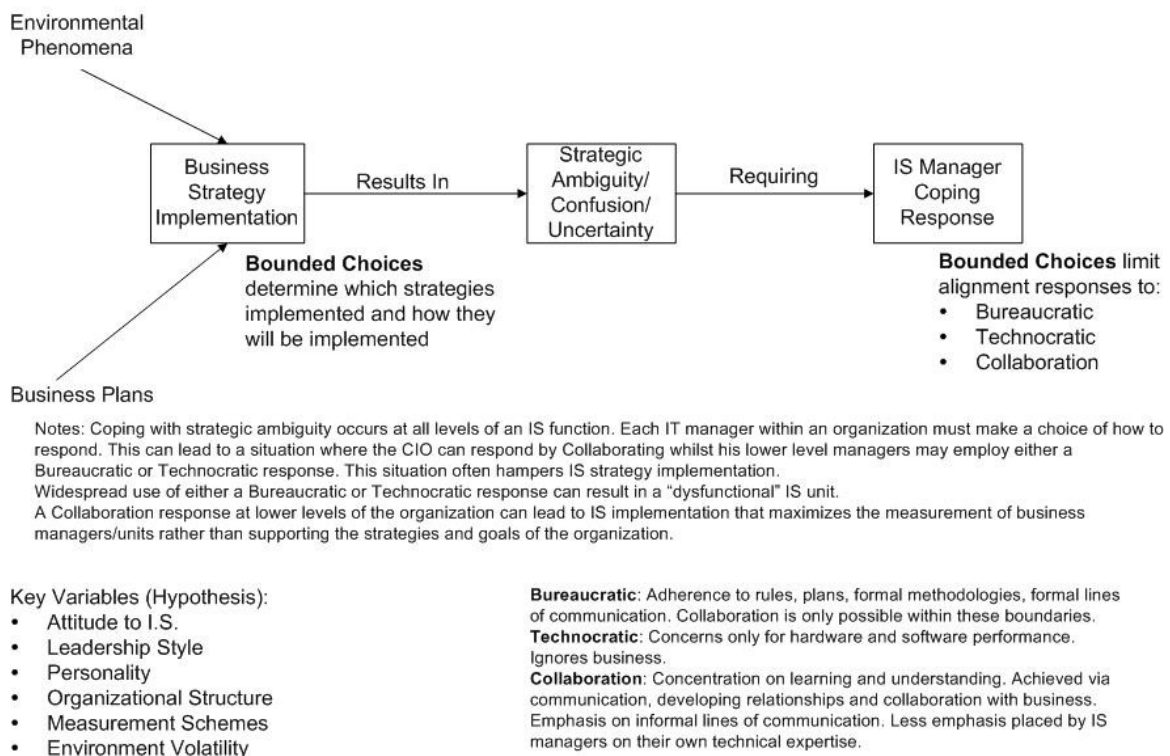


Figure 5.2. Development of theory of bounded choices within strategic alignment

This, then, resolves the issue surrounding the “Understanding” box of Figure 5.1. The model shown in Figure 5.2 explains why some managers attempted to understand their situation whilst others simply ignored it and concentrated on the technology. Their choices of action are bounded by various factors.

This model identifies three *coping responses* of IT managers when they are faced with strategy ambiguity – *Technocratic*, *Bureaucratic* and *Collaborative*. Brief descriptions of these are provided in Figure 5.2. Where a collaborative response is used the research subjects indicate it is normally the business manager who will determine which strategies will be implemented and whether they are implemented in such a way as to enhance organisational, business unit or personal goals.

There are still issues with the model shown in Figure 5.2. It does not identify a core category, or major concern of the research participants, although it provides additional understanding of the problem of alignment when read in conjunction with Figure 5.1. But I had lost a lot of the detail of Figure 5.1. As this model had been developed quickly as a memo to be used within my analysis (Memo 30 Jan 05) I was not overly concerned about its completeness or validity providing I had documented my insights. The Key Variables were hypotheses – I was not sure that these factors were, indeed, the key variables.

I could also see that I may be able to bring a number of these concepts to a higher level of abstraction. For example, I could create a higher category called *IS status* that could include *attitude to IS* as well as other codes such as *history of IS/Business relationships*, the *autonomy* of the IT unit, whether it could make decisions and expend funds in its own right (*authority*) and the *ability of the IS function to provide a reliable basic IT service*. It then appeared that *IS status* when combined with other categories such as *leadership style* and *measurement and incentive schemes* could actually be limiting the possible actions available to an IT manager when attempting to resolve strategy ambiguity. That is, they were part of a *Locus of Control* as they tended to control, or limit, the range of decisions and actions that were possible to an IT manager.

Similarly the Key Variables of *organisational structure*, *personality*, *ability to communicate* and *environment volatility* were all concerned with a manager's ability to comprehend a complex problem and, again, limited his ability to make choices. They formed a part of a *Locus of Comprehension*.

The above insight resulted in a return to my data. It indicated that most of the codes and categories I had developed during analysis were related to one of these two major categories – the *locus of comprehension* and *the locus of control*. The variables, or codes, contained within these two categories could explain the response of an IT manager to strategy ambiguity.

Although I had identified a bureaucratic response to strategy ambiguity in Figure 5.2 I had little data for its support. A further three interviews (with T8, T15, T16) were therefore conducted to obtain additional information regarding this response as well as

the technological response. In accordance with the theoretical sampling technique of the grounded theory method (Glaser 1978) these participants were specifically targeted as they were employed by organisations that I had previously identified as generally utilizing a technological or bureaucratic response. Analysis of these transcripts indicated that the tendency to bureaucracy is more likely a symptom of a technological response rather than a response in its own right. The bureaucratic response was therefore eliminated from the next iteration of the theory, shown in Figure 5.3, and replaced by the *level of formality* that is shown as a property of the two remaining responses. However this construct was still tentative and was refined in the final theory which is discussed in the next three chapters.

5.6.2 The Substantive Theory

The final draft model of the theory is shown in Figure 5.3. In line with many grounded theories the emphasis of the model is the basic social process that participants undertake to resolve their major problem – the core category (Glaser 1996, 1998), in this instance *strategy ambiguity*.

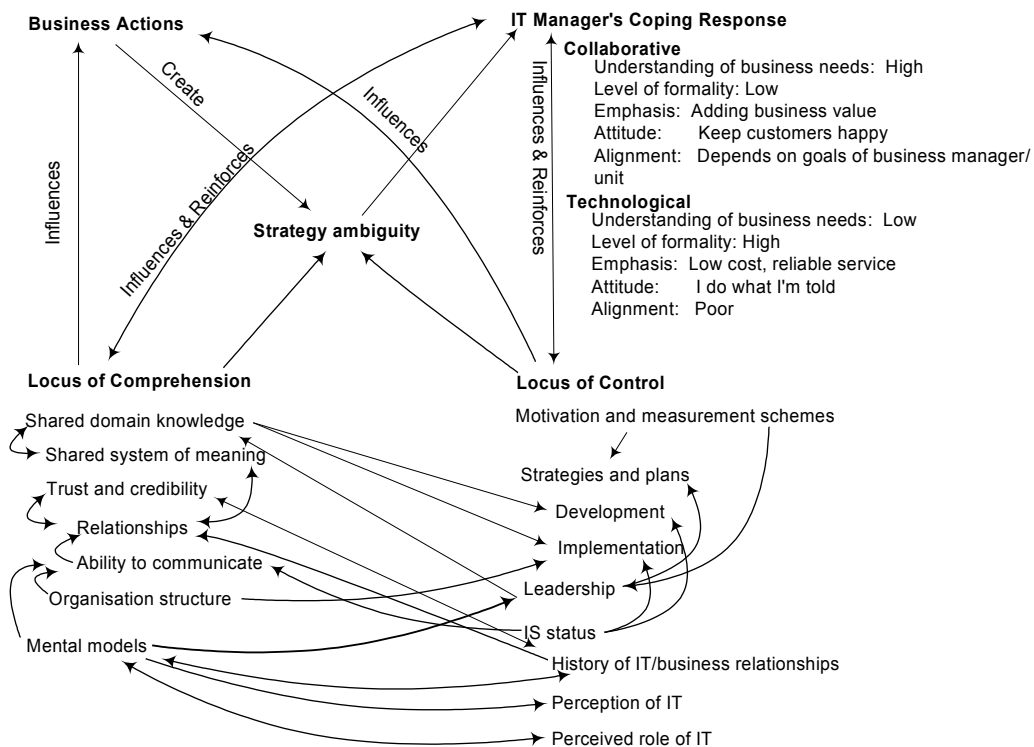


Figure 5.3. Strategic Alignment: Resolving Strategy Ambiguity within Bounded Choices. Arrows indicate the direction of influence between variables.

The variables that affect the ability of managers to resolve ambiguity are shown under two major categories: *locus of comprehension* and *locus of control*. Note that both business and IT managers suffer from *strategy ambiguity*, however some variables affect one group more than the other. Additionally, little attempt was made to identify all the factors that affect the ability of business managers to resolve ambiguity surrounding business strategies. That is, the model is biased towards the actions of IT managers. Variables affecting business managers are included because they were either identified by all subjects, both IT and business managers, during interviews or because they are important in creating the strategy ambiguity that must be resolved by IT managers.

Indentations in the lists of variables, or categories, indicate that a category is a property (Glaser 1998) of a higher category.

5.6.3 The Theory in a Nutshell

The essence of the theory is that business managers are confronted with a dilemma when most formal business strategies are presented to them. For the reasons previously discussed these formal strategies may not be personally meaningful to them, but they are left with their implementation. They implement these strategies, resolving their own ambiguity, according to their:

- ability to understand the problem or concept encapsulated within the strategy (*locus of comprehension*) and,
- freedom to actually make choices (*locus of control*).

This nearly always results in *strategy ambiguity* which must then be resolved by IT managers when attempting to attain alignment with the business. IT managers are faced with very similar limitations in their ability to make choices. The limitations encapsulated within the *locus of comprehension* and *locus of control* result in one of two responses by IT managers when they are faced with *strategy ambiguity*. These are either a *technological* or a *collaborative* response.

5.6.3.1 The Technological Response to Strategy Ambiguity

As indicated in Figure 5.3 those IT managers who adopt a *technological response* pay little attention to understanding business issues and problems. That is, they exhibit a low *understanding*. For one reason or another, they are unable to understand the business strategies. Although the reasons for this poor understanding vary by organisation and individual person, they are encapsulated within the two loci shown in Figure 5.3. Similarly IT managers operating within a technological response tend to rely on a relatively high *level of formality* when dealing with business managers, and in the development of strategic information systems plans (SISP). In essence they retreat to dealing with the technology and to all intents try to ignore the business and its personnel. Their *emphasis* is in the provision of a reliable, low cost IS service. The *attitude* of IT managers operating within this response is that of “I do what I’m told” often because they are prevented from doing otherwise due to the influence of variables within the two loci. There is little attempt at aligning IT actions with those of the business.

Participants from three organisations identified as using a technological response were interviewed in this research. They said that whenever the business wished to implement a new business system all three organisations employed outside consultants and contractors. The internal IT unit was often not involved and was normally used only to provide a basic, low cost service (M3, T8, T15, T16). That is, it appears that a result of a technological response is that the internal IT function is made responsible for little other than IT hardware and the maintenance of a reliable network. The participants included two from a large Australian financial institution that relies entirely on its IT system to operate. A third was a business manager in a very large multi-national consumer goods manufacturer. Neither size of the organisation nor reliance on IT seem to limit this situation. However, the small sample size within this study makes this type of generalization tenuous at best.

5.6.3.2 The Collaborative Coping Response

By contrast, IT managers who adopt a *collaborative response* place much more emphasis on understanding business issues and problems. They do this by forming, often informal, relationships with peer business managers and any other members of

the organisation who may be able to inform them. Much less emphasis is placed on formal lines of communication and formal methods and processes during strategy development and implementation. Their argument is that processes assist relationships and communications, but that a process can never replace a broken relationship.

The development of relationships with peer business managers when employed within a collaborative response has a dramatic effect on alignment.

Firstly, the development of relationships mean that the two managers, business and IT, are attempting to align their actions to a common goal. All the participants in this research indicated that IT is, and should be, reactive to business goals. But, due to the measurement schemes in place in many organisations and the self-interest of business managers the common goal could be the maximization of performance indicators applicable to either the business manager or his, or her, unit. As a result of the relationship developed between the business and IT manager the target of alignment could be organisational goals, a business manager's personal goals or the goals of the business unit. The latter may, nor may not, be similar to those of the organisation. The target will also, to a large extent, determine the alignment horizon. Personal or business unit targets are likely to result in short term alignment, whilst organisational targets are more likely to result in long term alignment.

Secondly, the development of peer manager relationships could be occurring at all levels of an organisation. At the most senior management level the target of alignment is often organisational goals, while the target of alignment at lower levels of an organisation could be personal or business unit goals (T1). This can explain the phenomenon found by Nordstrom and Soderstrom (2003) where the corporate goals for a new ERP system were eroded during implementation. The goals of the two groups were different. The focus on project deliverables and milestones, against which lower level managers are measured, meant the overall corporate strategy was ignored.

This situation possibly indicates a shortcoming of much previous research into alignment that has restricted itself to either the CIO and CEO relationship (for example Reich & Benbasat 1996, 2000) and to case studies of individual business units (for example Chan 2002). This restriction may have been limiting our

understanding of the overall alignment problem. The development, fit, and integration of business and IS strategies is important (Gottschalk & Solli-Saether 2001; Henderson & Venkatraman 1993; Kearns & Lederer 2000; King & Teo 2000; Teo & King 1996, 1997) but so is their implementation within business units by lower level managers.

5.6.3.3 Self-Perpetuating Cycles and the Difficulty of Improving Long Term Alignment

The decisions that business managers make surrounding the development and implementation of strategies are bound by their understanding of the problem and organisational factors that actually limit the choices available to them. As described above, these decisions often lead to strategy ambiguity that must then be addressed by IT managers as they strive to supply a service and gain alignment. These IT managers are also constrained in the decisions and actions they can take. These constraints mean that the decisions made by both business and IT managers surrounding strategy development and implementation tend to be consistent over time, thus reinforcing the constraints. A self-perpetuating cycle is established. This is shown in Figure 5.3 by the connections between the major categories in the diagram. The essence of this theory, then, contains very similar concepts to those found in structuration theory (Orlikowski & Robey 1991) and could be explained using that more general theory.

These self-perpetuating cycles indicate that any attempt by IT managers to change their response is likely to be extremely problematic. In systems theory terms they form a negative, or balancing, feedback system that is attempting to remain in a state of equilibrium (Sterman 2000). One business manager related the tentative steps of the IT group within his organisation to move to a more collaborative response by providing reports that could be useful to business managers. M3 indicated that these reports were being rejected by business managers, including himself, as they were perceived as unreliable because they were produced by the IT group. The *IS status*, especially the *history of IS/business relationships* and *attitude to IS* within this organisation make it unlikely that the IT group will be successful in changing its response.

The theory modeled in Figure 5.3 is non-linear in nature. The next two chapters will also demonstrate that the relationships between the variables found within the Locus of Comprehension and Locus of Control are also non-linear in nature. This calls into question much of the existing research into alignment which assumes a linear causal relationship between variables¹¹.

This feedback system also indicate why it is so difficult to improve long term alignment within an organisation. Previous research has indicated that it often takes an organisational crisis of some kind to gain any significant change in alignment (Sabherwal, Hirschheim & Goles 2003). But this same research indicates that any change may be short lived. The current substantive theory indicates why this may be. If the underlying attitude to IT by business managers, as well as other factors within the Locus of Comprehension and Locus of Control, do not change then the likelihood is that after the crisis there will be a return to the pre-existing constraints on managers. The original status quo will return and with it the initial response of IT managers to strategy ambiguity.

5.7 Summary

This chapter has provided an overview of the substantive theory of alignment that emerged during this research. In doing so it has challenged some of the views and assumptions of alignment and its study that are either implicit or explicit within the IS literature.

It also described in some detail the emergence of the core category – the major problem faced by the participants. This was identified as the ambiguity that surrounds the implementation of business strategies and the problem that IT managers then have in dealing with this ambiguity.

The following two chapters will detail the emergence of the variables, or categories and properties, that make up the Locus of Control and the Locus of Comprehension.

¹¹ See, for example, Reich & Benbasat 2000 who developed a linear research model of causality from the literature but acknowledged that causality between their variables may, in fact, be recursive.

6 The Locus of Control

6.1 Abstract

Subjects of this research referred to factors that limited their ability to make choices and take actions. These factors, or variables, appear to be a part of four major properties of a theoretical category that I call the locus of control. The four major properties of the locus of control are:

- Measurement and Incentive Schemes;
- Strategies and Plans;
- Leadership, and;
- IS Status.

The variables within these properties, and their emergence as properties of the theoretical category, are described.

Subjects were concerned about these variables due to their ability to affect the decisions and actions taken by business managers. One effect of the locus of control is that business managers tend to modify, or at worst ignore, business strategies during implementation. This, then, creates ambiguity surrounding strategy that IT managers attempt to resolve. One tactic that IT managers employ is to form relationships with their business peers to gain an understanding of the business strategies actually being implemented so that they can then align their actions with those of their peers. It was found that the variables affecting the decisions and actions of business managers also limit the behaviour of IT managers when they employ this tactic.

6.2 Measurement and Incentive Schemes

Issues associated with measurement and incentives were present during the initial analysis of the first focus group (2nd August 2002) although they were not identified as

such. The following passages occurred within four minutes of the commencement of the first focus group session – the first data collection session for this research project.

... *especially companies that are large., Everything they do is more domestic focussed, not really globally oriented... Works fine for them because they have the whole system database sitting right there, but they don't really consider how other regions' [goals] are going to be achieved* (T9, para. 32).

So you are at the end of the line? (T12, para. 33).

Exactly. The system is in USA and we have a friend who lets us into the database - and one meg, 80 people using it, its very, very slow, that kind of stuff. So, they don't really see how their international people work. They just make their decision on the system just based on how it's going to work for them. So, just a very narrow approach when they make decisions ... (T9, para 34).

The shaded sections were initially coded as *self interest* and were the first instances of this code being employed. However, this particular code was then used extensively in the focus groups and early interviews. Participants related many instances where self interest appeared to be present. The self interest appeared to be associated with both individuals, from all levels of an organisation, as well as business units. Some examples are provided with the shaded sections of text being that part of the quote actually coded as self interest.

one of the groups of users that we deal with, the representative of the group, I don't know, the product is called (x). It's a business analysis and reporting tool it just reports financial data. But the business rep that I'm dealing with is the financial analyst. He hasn't the slightest concern for all those other people out there who might use the tool just as a reporting tool. An example of the sorts of things that - the decisions that he might make that might impact those people, and he just says "I don't care". So he will make changes to the system that might have negative impact on the people downstream. And he says "Well, if they don't know how to use it, then they shouldn't be using

the tool. If they can't cope with these..." And I'm thinking, now this is a user, right, who is supposed to be representing the business, but he's only representing his section of it. So, what you were saying about silos. Even within the business there are silos. (T11, para. 116).

This is an example of self interest at a relatively low level of the organisational hierarchy. But it became obvious in the interview with T1, below, that self interest is not restricted to lower levels of the organisation.

There are examples of other organisations where I couldn't identify a rational strategy. And there were things happening where maybe you call them strategies, but they were more around the interests of the senior managers of the company rather than one that you could map back to what the shareholders may have liked to happen (T1, para. 17).

In what proportion of organisations you've worked for was that sort of thing happening? (Interviewer).

The self-interest one I would say to a greater or lesser extent was happening in all of those organisations, and we talking about 10 that's the rough number, but it was really strong in 3 of those 10. Sometimes to the point of decisions that were clearly counter productive to the health of the organisation being made because they were in the interests of the people with the power to make the decisions (T1, para. 19).

M3, reflecting on his previous role as the CIO of a telecommunications company, also indicated that self interest can occur at senior management levels. He was discussing a situation where the actions of senior management, including the CEO, contradicted the organisation goals and strategies that had been communicated throughout the organisation. He had made the comment that if you followed the official strategies, you actually failed as this was not what management wanted. I then asked him whether he believed that these actions were motivated by self interest (by that time I was very sensitive to this situation). M3 responded:

At the CEO level, most definitely. At the board level of course they are... I guess they are accountable to the shareholders, but in a sense they were the shareholders too. But certainly they acted very much in their own interests. But they couldn't communicate that to people so the message they gave out was more sanitized, your standard sort of mission statement despite the fact I don't believe they had any faith that that was... Or certainly they act that way. They may have believed that was what they were trying to do but it certainly wasn't shown in their actions (M3, para. 46).

The above quotes give examples of self interest at the individual level. But I came across other instances where it could be interpreted that self interest became an issue at a business unit level. The shaded sections of the following quote, which comes from early in the first focus group session, were coded as **competition**.

We've got branches, and we've got products we are trying to put out. New South Wales branch get in trouble for trying to work with Victoria, or South Australia or Queensland branch to provide a focussed info kit, or whatever, to clients or potential clients. If they're crossing those borders, they have to really justify it. So there's bunker mentality NSW branch against Vic branch. I've come across this a lot in the last few months, and I'm just thinking it makes no sense. So, as far as IT and business alignment goes one of the main inhibitors may well be divisions within the business as well, not just IT... Business are still competing against each other. That's just the way they work. Sales is usually competition based, commission based "If I need more money, I'll do more sales. If I talk to them, he may get that sale, I won't. Therefore I won't give it to him" (T13, para. 117).

However, it could also be interpreted as indicating the self interest of the various units – they are not sharing information and resources (the focussed info kit).

This situation, where I gave different codes to similar concepts, occurred frequently in the early stages of my analysis. I had no idea what I was going to find and was attempting to cover all bases. This resulted in some sections of text being allocated to a number of codes. I resisted the temptation to consolidate the codes until after all interviews had been conducted, transcribed and analysed. This was primarily due to personal preference and because I was using the NVivo qualitative data analysis tool. Having many codes is not an issue and they can be easily combined at any stage without loss of data. My decision was later supported in private conversations with both a PhD student at UTS and a post-doctoral

researcher experienced in the grounded theory method, who both attended an NVivo workshop run by the developers of the tool. They reported that the developers of NVivo recommend not combining codes, or sorting them into theoretical categories (1998, p. 440) until near the end of analysis. However, it should be noted that during analysis I hypothesized that many codes 'went together' as properties of a theoretical category. These observations were recorded in memos (Glaser 1978, pp. 83-92). In many, if not most, instances I modified these hypotheses over time as my understanding improved.

There were references to self interest in nearly all the interviews and I initially viewed the actions of those involved negatively. It initially appeared that the decisions of many managers were aimed at maximising their own remuneration but were almost destructive to the organisation. However, I started to notice that there were often addendums, or caveats, to the statements being made by participants when they provided examples of self interest. An example of this, by T1, is given:

The one example that really stands out in my mind it was very much a case of managing the perceived bottom line in order to shore up bonuses. It was as blunt as that. Things that should have been done to ensure the long term growth assets of the company were being pushed back because of "if I don't make this number this quarter I don't get my cheque." And even to the point of saying that in executive meetings, doesn't bode well doesn't sit well! (T1, interview 1, para 29).

This extract indicates that the behaviour of the manager is related to the *motivation schemes* applied to him. I then went back to my data to see if there were similar instances. In most of the quotes provided above it could be interpreted that the *self interest* was, in fact, a reaction to the way the performance of a person, or business unit, was being assessed. This is an example of my improving theoretical sensitivity (Glaser 1978, pp. 1-17) in that I was starting to see what was actually in the data rather than what I thought was there.

All of the above extracts came from early interviews. The grounded theory method recommends that data should be obtained so that “... *the analyst jointly collects, codes, and analyses his data and decides what data to collect next and where to find them, in order to develop his theory as it emerges*” (Glaser 1978, p. 36). This is known as theoretical sampling. The intent is for the researcher to follow leads so that the emerging theory can account for all variations of data and is, therefore, saturated. In accordance with both this recommendation, and the need to be theoretically sensitive, I started to investigate reasons for self interest in subsequent interviews. In most instances I did not need to ask specific questions as subjects proffered the required information voluntarily.

In nearly all cases it was the performance *measurement schemes* being applied to both individuals and business units that encouraged self interest. People were reacting to the way they were being measured, a situation well known both within the business (Baker 1992, p. 608; Horovitz 1984; Kerr 1995; Sarin & Mahajan 2001) and IS literature (Orlikowski 1992)¹². The research cited by Baker dates from 1955 to 1990. The current research indicates that though we have been aware of this problem for some time it is still an issue within many organisations.

However, only in a few instances reported by T1 and M3 was this to maximise personal remuneration and where it occurred it was related to the actions of very senior managers (this obviously excludes sales personnel who are remunerated via commissions on sales). An example was provided earlier. T1 then provided reasons why senior management could make decisions that increased their own remuneration

¹² Note: A version of this paper appeared in Proceedings of the Conference on Computer Supported Cooperative Work, ACM, New York, (1992), pp. 362-369

at the expense of the organisation. In describing his experiences with independent business unit managers, T1 said:

I guess there's always been two questions in my mind. How could somebody who's in a senior position, charged with the responsibility to make decisions that way, and clearly they were operating in what they saw as their best interest. And you would have to assume that they didn't foresee a lot of consequence from the rest of the organisation for what they were doing. So, and that was true in all the cases. There wasn't a lot of accountability coming back, so... therefore the consequences to them for their actions were the personal impact of their action, not the business impact of their action (para. 27).

The highlighted sections were coded as **accountability**. T1 then went on to say that, in his experience, if a manager was inclined to make decisions that favoured himself rather than his organisation, then the detrimental consequences to the organisation may not be very far in the future. T1 commented that, in some cases:

the consequences of the decision wasn't that far in the future, only 12 18 months away. Its not like "Oh well, if we do this now, it will be nice and sunny in 5 years time." These were very immediate and very obvious things (para. 31).

Again, the highlighted section was coded as **accountability**.⁷ However, other sections of this passage were coded as **short term** as a number of instances of decisions favouring short term results had been identified. This became important when considering the implementation of strategic plans and is discussed further in the next section.

My subjects indicated that some organisations do make a determined effort to develop incentives that will support corporate goals and strategies. M1 described the situation in her organisation:

We do something called the scorecard where you get, kind of, major strategies that we do for the regions, and then we break them down

into 'where's your piece of that particular strategy?' So the strategy's owned... by a particular company group chairman. There are about six strategies and it get broken down, and on the scorecard it comes down to almost like [this is] 'my part in this particular thing, in this particular scorecard'. And that sort of says 'OK, this is how we're going to be aligning ourselves and not going off course' by doing something like that. And those things are actually tabled (para. 189).

However, another business manager in the same focus group then indicated that even carefully planned **motivation schemes** may not achieve the desired results. Most personnel in his organisation are well remunerated and are measured on two sets of key performance indicators (KPIs) that relate to personal and corporate performance. These are weighted so that personal KPIs account for only 40 percent of the total KPIs. Bonuses are paid for performance that exceeds the standards set out in the KPIs. The intention was that this incentive scheme would motivate actions to improve both personal and organisational performance. But this was not happening. M4 described the situation thus:

So, that part of the culture's right, looking after people, empowering people, and providing people with combination KPIs is great. What we're not good at is 'You need to focus on something that's outside your own backyard, and you need to realise who your customers are' (para. 198).

He then elaborated. Because of the generous remuneration that they received, many personnel did not particularly care if they did not receive a substantial bonus. They therefore concentrated on meeting, or exceeding, their personal KPIs as this was relatively easily achieved. Those KPIs relating to corporate goals and performance were almost totally ignored. M4 made the observation that the incentive scheme should be modified so that bonuses are paid only after those KPIs relating to corporate goals are met. As M4 said:

So, where once you focussed on your own KPIs, [you] will be focussed on the corporate KPIs (para. 202).

T7, during an individual interview, provided an example from her own organisation that related to the performance of individual nationally based business units. T7 described the situation thus:

In a very broad sense because a lot of the plans are all bottom line focused. Usually the mantra around here is just 'hit your number. Don't care how you do it, well within reason, but hit your number.' ... what they're kind of saying is we are giving you the freedom to execute that strategy in any manner you see fit for your local industry. So you find the strategy that hits your number. But my issue with that is that there are some strategies which are not number based. IT is one of them in this organisation, HR is another, finance is another. [T]he sales and marketing function need to execute strategies to hit their numbers. So what happens is 'bugger all the rest of the strategies. Bugger the support function strategy' if you like. If the strategy of IT is to have standardized infrastructure, for example, the MD in a particular country might fight that all the way because all they can see that doing is eating into their bottom line number. And that's what... Essentially that's more or less what they're incentivised on (T7, para. 40).

The experiences related by M4 and T7 indicate the difficulty that management faces when attempting to encourage particular behaviour through the use of incentive schemes. This is particularly so when those desired behaviours relate to organisational goals, strategies or process performance (Baker 1992; Castellano, Young & Harper 2004).

My improving understanding of the reasons for management actions was noted in a memo written on 2nd Sep 2004, part of which says:

Having developed a strategy (strategies) the problem is then implementation. Again, the structure, incentive schemes and self-interest of the business units and managers have an impact. T7 indicates that IS strategies may be avoided if they will increase the costs of a BU and so cause that BU to miss its target profitability. In other situations self interest becomes more blatant and personal. See T1 interview.

My understanding of the relationship between these variables (*self interest; motivation and measurement; accountability*) also changed. As mentioned previously, I initially perceived self interest negatively and a category in its own right. This is reflected in a very early model, developed on 18th October 2004, to document my thoughts part of which is shown at Figure 6.1.

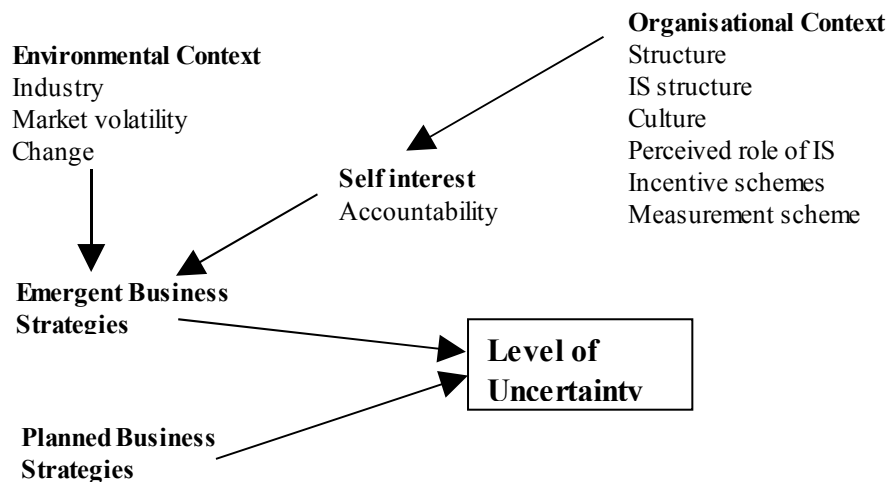


Figure 6.1. Part of model developed on 18/10/04 showing relationships between codes identified after initial coding

The model in Figure 6.1 indicates that some aspects of the organisational context can encourage self interest. This, in combination with factors in the environmental context, can promote the emergence of strategies that are in conflict with the planned business strategies and increase the level of uncertainty faced by IT managers.

As coding continued, and I gained a greater understanding of what was actually being said by my participants, I realised that *self interest* was a logical response to the way managers were being measured. It therefore became a property of *motivation and measurement schemes*. The form of self interest depended, to some extent, on the level of accountability being applied to managers. According to one participant, a lack of *accountability* was only associated with very senior managers and this could allow them to make decisions that maximised their own remuneration often to the detriment of the organisation. Lower level managers are accountable for their actions. For this reason their actions tend to maximise their own performance, or that of their business unit, according to the measures being applied. *Accountability* also became a property

of the category *motivation and measurement schemes*. This is summarised in Figure 6.2.

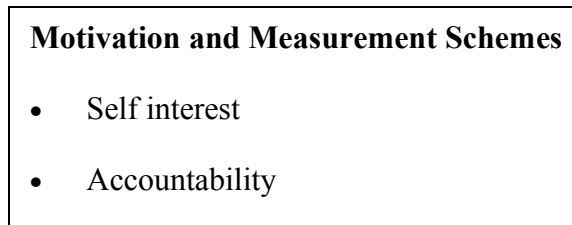


Figure 6.2. The category Incentive and Measurement Schemes and its properties

The major implication of incentive and measurements schemes is their ability to modify the behaviour of their targets – in this instance, managers. Earlier research (Baker 1992; Ireland & Hitt 1999; Kerr 1995), and the participants of this research, indicates that people behave according to the way they are measured. In this respect incentive and measurement schemes tend to control the behaviour and actions of managers. This was highlighted by Bell (1999) when he said:

“... it means that values are objectively evaluated based on the direct experience of the members. The creation of culture and the socialization of the organisation’s members rely heavily on learning processes to endure an institutional reality. In many cases this is trial and error learning. This learning may take place in planned or informal, often unintended ways. The reward system of the organisation (promotion, training, selection, benefits, prestige, etc.) highlights what values are truly organisationally important. Individuals will then execute behaviours that further their long term professional survival and well being. This strongly implies that if there is a difference between what an organisation declares as its values and the values demonstrated by its policies, the rational members would put priority on the values determined from the policies” (Bell 1999, p. 2)

This situation was neatly summarised by T7:

I think one of the biggest hampering factors for alignment is incentives. If you are just incentivized on the bottom number and if that means that you say 'I'm not following this strategy and I'm not following this strategy, and I'm not following this strategy' but you still get rewarded, why are you ever going to do it?(para. 140).

Similarly, Ireland and Hitt (1999, p. 52) state that

“By focusing on performance-induced outcomes, financial controls encourage the accomplishment of short-term performance goals. An emphasis on financial rather than strategic controls makes managerial rewards contingent on achievement of financial outcomes”.

Earlier in the interview T7 again broached the subject of incentives when asked what were, in her opinion, the three most important issues that help alignment. She replied:

Ultimately, the only way you get alignment is through incentives. At the end of the day the organisation makes the numbers it needs to make because that is the way people are incentivized. My personal opinion is if you want the global infrastructure, if that was a strategic direction you wanted implemented throughout the world, you incentivize people (para. 124).

Late in the analysis it was realised that other factors also tend to control the actions of managers. These factors, or categories, then became properties of a theoretical, or conceptual, category (Glaser 1978, p. 55) that I have called the **locus of control**. The relationship between the locus of control and its sub-category incentive and measurements schemes is shown at Figure 6.3.

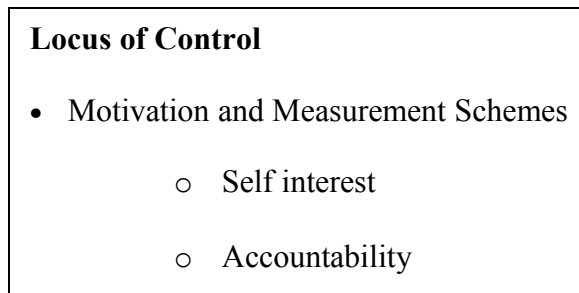


Figure 6.3. The conceptual category locus of control and its sub-category incentive and measurement schemes

The foregoing indicates that *motivation and measurement schemes* can have a profound affect on the *implementation of strategies*, especially business strategies. That is, the data collected in this research indicates that there are relationships between *motivation and measurement schemes* and, *strategies and plans*. This is consistent with earlier research (Edwards & Peppard 1994, p. 408) and is explored further in the next section. It is also shown in Figure 6.4 which is a modification of a causal-loop diagram (Sterman 2000, Chpt 3). However, causality is not implied in Figure 6.4 as the data collected and analysed here does not indicate cause – it merely indicates that a relationship, or influence, exists between variables. It would require additional quantitative research to allocate causality, if it actually exists. The next section also indicates that there is a reciprocal relationship between *strategies and plans* and *motivation and measurement schemes* – the influence is bi-directional. The model shown in Figure 6.4 will be developed throughout this document. Arrows are used to show where the data indicates a strong directional relationship.

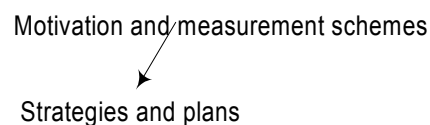


Figure 6.4. The direction of major influence between variables so far identified within the locus of control

The development of the model shown in Figure 6.4 is consistent with the interactive coding family being used to inform the analysis of data within this grounded theory study (Glaser 1978, p. 76).

6.3 Strategies and Plans

Although the heading for this section is titled Strategies and Plans, the major concern of participants of this research revolved around strategies, particularly the implementation of business strategies an area that has received far less investigation than strategy development but is more problematic (Edwards & Peppard 1994, p. 407). The strategies that were being enacted within organisations then limited the decisions and actions available to IT managers at all levels. This issue was raised in the first two minutes of the first focus group session.

T13 was a development project leader within a large software development and consulting firm. Its major focus had traditionally been the accounting market within Australia which it dominated. Concerned with few opportunities for growth in this market his firm had recently acquired an organisation developing legal software. T13 then described the situation:

But, all of their services, their processes, and everything are geared to that industry [accounting]. So much so that marketing happens for the accounting market. Now I'm not griping about this. This is just the simple fact. This is their comfort area. For instance, the marketing group go to horrendous trouble to provide seminar material and things like that, that they arrange around Australia. And if you want to arrange something for the legal side of things, there's no resources, there's no budget. It's a political situation. [Our firm] actually elected to get into this, and strategically from the top down this is their biggest identified market for growth. ...But, on the other side of the coin, trying to get some development happening... we're not getting any priorities. I'm not saying priorities, but even footing! That's the politics of the situation. So, besides from the fact that there's a corporate strategy to move forward politics are interfering with that. And it's taken 18 months, and it's is still at baby crawl stage [T13].

Initially, the whole of this section was coded as *ambiguity* with the two highlighted sections also coded as *resistance to change*. Other smaller sections were coded as *politics* primarily due to the occurrence of that word within the text.

The quotation above indicates that, although the firm had an official strategy of expansion within the legal market, many sections of the firm were still concentrating on the accounting market. Employees were resisting having to learn something new and to change the way they worked. It appears, then, that this phenomenon may influence the way in which business strategies are implemented. The importance of this to this research is its affect on IT managers.

The words and phrases used by T13 in the quotation indicate his feelings of ambiguity and frustration. It left him with a dilemma: where should he direct his development energies - at the legal products promoted by the official business strategy, or the accounting products that appeared to be promoted by most members of the organisation?

In the course of the research only a few sections of transcript were coded as politics. This code was eventually merged with another as it was realised that subjects were usually referring to something else when they used the term politics. In the above

section of transcript it can be interpreted that politics was probably an attempt by many members of the firm to remain working with products, the accounting packages, they already knew.

As analysis continued many other factors that appear to determine which business strategies will be implemented, and how other strategies may be modified during implementation, were found. Other examples are now provided.

Many strategic plans include items such as vision statements, mission statements, strategic intent and then some broad organisational objectives based on these (Campbell, A. & Alexander 1997, p. 43). But these plans often do not provide enough detail for people at an operational level to effectively implement. This situation was summarised by T1 as:

*the statement that most line managers don't know or ignore corporate strategy ... I would state that differently and say that **most line***

managers do not understand the corporate strategies. So it appears that they don't know, or it appears that they're ignoring it, but in fact they have no idea what it means to them. A lot of people, and this has been my experience, a lot of people can't understand what that strategy really asks of them (para. 151).

A similar observation was made by Davies (1993, p. 204) when he said

Expressing a vision in terms of generalities such as, quote 'To provide products and services which satisfy our customers and build a competitive edge', provides no challenge, no clear focus for action and no useful guide to concrete behaviour.

The highlighted section of the participant's quote, above, was initially coded as **understanding**. Much of the remainder was initially coded as **strategy implementation conditions**. But, it provides evidence that managers do not specifically ignore strategies. There are conditions, in this instance not knowing what actions are required of them, that affect implementation.

A similar observation was made by T7:

All the plans I've seen still don't give you execution strategies. You are still left to interpret what does that strategy mean in my role, what can I do to support that? (para. 96).

T7 later expanded on this theme:

I think a lot of organisations have strategies and plans and directions but if they are not simple and easy to articulate and easy to understand, forget it! You're never going to get alignment because people don't know what you're trying to do (para. 128).

T2 is the CIO of a large fast moving consumer goods (FMCG) manufacturer and related a similar concern as:

I have sitting in my office, of the five business units, four [document] packs an inch and half thick. This is their strategy. But there is a lot of financial data there, there is a lot of marketing intelligence there, there is a lot of this and a lot of that. There is a lot of work around

what we're going to do in terms of new product depending on the nature of the business unit as to how retail oriented they are. As usual though, strategy is a great word, but how do you convert strategy into a work program? Its fine to say we're going to be the cheapest or we're going to improve market share by 38% or whatever their number is, but how do you align a work plan to achieve that? (para. 34).

These quotes were initially coded as **strategy implementation conditions**. They are examples of my improving theoretical sensitivity in that I was becoming aware that there were a number of factors that affect the implementation of official business strategies. These examples also support earlier research into the issue of business strategy implementation (Campbell, A. & Alexander 1997; Ciborra 1997; Mintzberg 1987). Campbell and Alexander report that:

Managers at the business-unit level frequently complain that the company's objectives are not clear. A common refrain is, "Why doesn't corporate tell us what it wants us to do? Then we can devote our energies to figuring out how to do it" (1997, p. 43).

They then go on to say that the "...tension is often between financial goals, such as cash flow and profit, and strategic goals, such as market position and growth" (ibid. 1997, p. 43). This tension is reflected in the earlier section on measurement and incentive schemes. Managers implement strategies in a manner that maximises their own performance, or that of their business unit, according to the measures being applied. The tension between financial goals and strategic goals was demonstrated earlier by T7 when she said:

...the mantra around here is just 'hit your number.' ...what they're kind of saying is we are giving you the freedom to execute that strategy in any manner you see fit... you find the strategy that hits your number (para. 40).

But, financial goals and performance measurement are usually based on the financial year. Participants reported the tendency of many business managers to focus on short term goals that were related to the performance measures being applied. A number of

examples were provided in the previous section on measurement and incentive schemes. T16 also provided evidence from his organisation, a large Australian financial institution:

I think most people in senior leadership roles in this organisation are rewarded on an annual basis. For example, a project manager goes in to a project and once that project is delivered that is how he is rewarded - whether that project actually descoped a whole lot of functional requirements. Whether the system turns out to be a real pig in terms of upgrading and maintenance and support, that doesn't follow him [into the future]... (para. 59).

However, participants still indicated that official strategies guide their actions.

The foregoing indicates that there are many reasons why an official strategy may either be ignored or modified during implementation. It is not an argument against strategic planning. Both the literature that questions the efficacy of forming strategies via logical, formal planning sessions (Campbell, A. & Alexander 1997; Edwards & Peppard 1994; Mintzberg 1987, 1988) and the participants of this research argue the usefulness of having formal, documented strategies. But, it does indicate that strategies that are implemented tend to have certain characteristics in that they:

- 1 Are conceptually simple and have meaning to the person enacting the strategy. Many strategies are either visions or 'motherhood' statements such as 'We will provide an industry leading service to our customers.' The person enacting the strategy is entitled to ask 'What does this actually mean in practice?'
- 2 Usually relate to performance measures. These may relate to an individual or business unit (or both).

- 3 Exhibit short term results. This is related to the previous characteristic. To enhance performance measurements, the results of any actions must appear in the short term
- 4 Do not require changes in a person's work habits. Thus they should be simple to execute and not conflict with the manager's current mental models about how the organisational system operates. They tend not to require additional knowledge from outside the manager's functional area (Campbell, B.R. 2004, 2005).

Both earlier research and the current participants indicate that many official strategies do not exhibit these characteristics (Baker 1992; Campbell, A. & Alexander 1997; Ciborra 1997; Kerr 2003; Mintzberg 1994b).

In summary, business strategies do limit and guide the actions of managers but many organisational factors can affect their implementation. *Strategies and plans* is therefore added to the *locus of control* as shown in Figure 6.5, below.

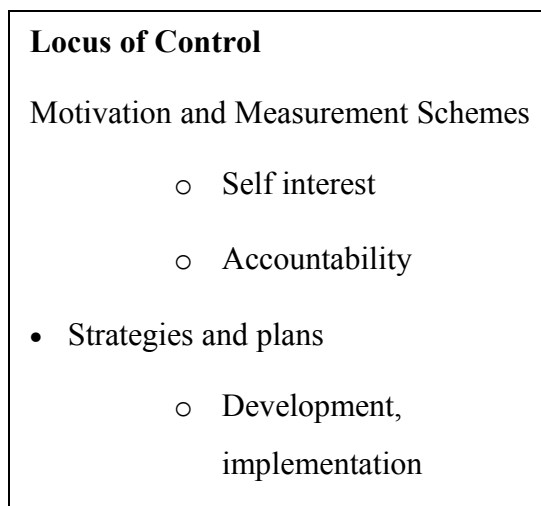


Figure 6.5. The inclusion of the sub-category strategies and plans within the locus of control.

It rapidly became apparent as data collection and analysis progressed that the ambiguity surrounding the differences between officially communicated business strategies and those actually being implemented was the major concern of all the IT participants of this research. I term this *strategy ambiguity* and is shown in Figure 6.6 which is a development of the model presented in Figure 6.4.

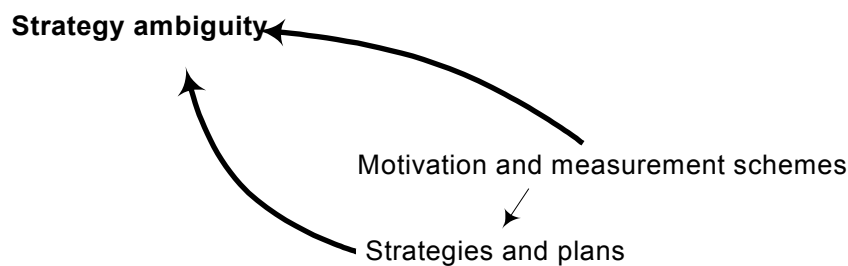


Figure 6.6. Adding strategy ambiguity to the influence diagram commenced in Figure 6.4.

This situation presents IT managers with a dilemma – do they align their own actions with the official business strategies, or with the observed actions of business managers? But there were other factors that contributed to strategy ambiguity:

When asked about consistency of strategy and changes over time T1 provided another hypothetical example of the variation between espoused strategies and those actually in use:

In a start-up company, for example an IT start-up company, changes in direction every few months is sort of par for the course. In a hundred year old leather bound book publishing company, changing strategy every 10 years is probably a bit too fast. So, there's not a one time scale fits everyone. But there's another aspect of consistency in the strategic message and that is its internal consistency. On one hand saying that on-line is the future for our market, but all the new product development is going into books is an example of inconsistency in the strategic message. People sit there and say 'what sort of bull-shit is this?' because we're being told this, but we're doing that. It... doesn't match the message, people will trust the action and they doubt the message (T1, para. 83).

This quote indicates that the actions of leaders can also either encourage, or limit, strategy ambiguity. This is now discussed.

6.4 Leadership

The previous two sections were primarily concerned with the effect of **motivation and measurement schemes** and the form of business strategies on the actions and

decisions of business managers. This reflects a primary concern of the participants of this research even though they acknowledged their affect on the actions of IT managers. But these participants then indicated that leadership style affects both business and IT strategy implementation as well as the corporate culture. This is via a leader's ability to demonstrate:

- direction;
- commitment to, and consistency of, the message; and
- an appropriate leadership style.

6.4.1 Provide Direction

Compared to some other categories there was comparatively little transcription text coded to *leadership*. Additionally, unlike the other categories discussed in this chapter, the concept of leadership did not emerge slowly over a period of time. It was apparent from the moment it was first mentioned as managers who raised this issue, primarily CIOs, considered it to be vital to alignment. One effect of this situation is that the following discussion tends to be a description of the category supported with quotes by subjects. I do not describe how the category emerged – it was ‘in my face’ from the time it was first mentioned.

The initial mention of *leadership* came from the business managers' focus group. The three business managers within the group were attempting to identify what they thought were the three most important enablers and inhibitors of alignment. They had already decided on culture and communication as enablers. In attempting to identify the third most important enabler M1 then said:

It's got to be leadership. It's turning the ship around. It's turning that thing around, and you've got to have the leadership there. [You can't] get bogged down with the idea this is a huge organisation, that there is no way this is going to happen (para. 254).

This was then followed by a discussion of examples of good leadership. The focus group then agreed that the three most important enablers of alignment were culture, communication and leadership. They concluded this section of their discussion with ‘*We know what the inhibitors are. Keep doing more of the same*’ (M4, para. 297).

This theme of providing direction for an organisation was also raised by M3, T1, T2, T15 and T16. When asked about the three most important enablers of alignment T2, the CIO of a large fast moving goods retailer, responded:

...having a business leader or business sponsor who knows what they want to achieve. If you're going to lead you've got to lead! If you're going to lead you've got to know what you want. The business leader, the sponsor in project parlance, has to know what their objective is and has to be able to communicate that clearly and succinctly. That, to me, is number one (para. 117).

M3 was one of only two subjects of this research to indicate that they had worked in an organisation where senior management did not provide some sort of direction. This then impacted other functional managers who were not given a business direction. M3 described a situation where he was attempting to develop an IT strategy but without knowing what the business strategy was. I then asked him whether he experienced any resentment from the business in this situation. M3 responded:

Yeah. Some of them [other functional managers] think, well how do you do it if you don't have a direction? And I just told them, you've abdicated responsibility for it and someone has to set a direction or my team can't function. How can I measure what they're doing if we don't know where the hell we're going? So, yeah, there was a bit of resentment, but by the time I put it to the team that we should be building our own strategy there was a lot of support for it. There was a leadership vacuum at the time and we basically filled it ourselves to get the business back on track (para. 24).

Referring to this situation later in the interview M3 indicated that the other functional managers were able to understand what he was attempting to achieve given the circumstances. Eventually a situation arose where *'when things did go wrong [the functional managers] look for solutions rather than people to punish'* (M3, para. 73).

T1 also reported working in at least one organisation where there appeared to be no formal business strategies. He also resorted to developing an IS strategic plan without knowing the business strategy. T1 reported that:

IS strategies existed, not quite in a vacuum, but in the absence of a business strategy. In many of those cases I was actually responsible for developing those IS strategies. They tended to incorporate much of the material that you would expect to find in a formal business strategy, if there was one. So, in the absence of any formal communication of the business strategy [the result was] very much the business managers seeking to have those issues captured in the IS strategy (para. 57).

Both M3 and T1 were employed by relatively small businesses at the time of these experiences although their then organisations could not be classified as a small business. No other participants indicated a total lack of business direction and strategy development within their organisations. The situation described by M3 and T1 could support the decisions by earlier researchers into alignment and strategic information system planning who tended to restrict selection to very large firms as “*ISP is more likely to be carried out by larger firms*” (King & Teo 2000, p. 670).

The two examples, above, were the only instances encountered in this research of a CIO becoming involved in the development of business strategies. Every other participant assumed that business strategies are developed by the business and the IT function then aligns its actions with those strategies. I was aware of this situation relatively early in analysis and commented on it in a memo written on 13 Dec 2004. This memo was written whilst analysing the interview with T2 and prior to the interview with M3. I wrote:

It is interesting that all of my CIO participants have assumed that the business develops its objectives and strategies and that the IS role is then to support those strategies. Few of these people have attempted to influence business objectives and strategies. The one instance I remember where a CIO became involved in business strategy development (T1, first interview) was where there was an absence of business goals and objectives (Memo 7, T2 transcript).

This situation is counter to the recommendation generally promoted by IS scholars which argues that a highly integrated planning process, resulting in a set of integrated plans, leads to improved alignment and business performance (see, for example Earl

1993; King & Teo 2000). It is interesting, and possibly significant, that the only examples of CIOs engaging in business strategy development encountered in this research occurred when there was an absence of business strategies and apparent absence of business leadership. This may be the result of the small sample size, nevertheless it appears that *leadership* may influence the *development of strategies and plans* and is shown in Figure 6.7.

The earlier discussion relates primarily to the leadership provided by CEOs, but my subjects indicated that leadership and direction was required from other managers, but this may not be easy for some managers. T1 explained:

...but talking about the CIO's role specifically, most of their handbrakes, their barriers to performance are in the people issues of leadership of their own team. To get the team to perform at maximum, or interacting with other people to get results. It's always about how different groups work together and all these tend to be perceived as HR issues. Consequently, CIO's might have a better time of it if they were able to recruit the assistance and active participation of those functions that are normally in the domain of the HR manager (para. 11).

T1 was then challenged as his comments, above, appeared to cover two different issues – the ability of a CIO to affect change, and his or her ability to get along with people. The following exchange with T1 took place:

I guess I wasn't really thinking about the getting along aspect. I was thinking in terms of its effect on the organisation, the getting things done. Getting things done is always getting things done through people whether it's your own people or other people within the organisation or people outside the organisation. It's always getting it done through people. And different organisations, different people have different ways of deciding and doing. From the research paper, Earl's paper (Earl 1993, discussing approaches to SISP), there's one suggestion that a certain way of thinking, deciding and doing [the organisational approach to SISP identified by Earl, 1993] is more

likely to produce results than other ways of thinking, deciding and doing. From my experience, you don't get those choices. But you can bring those choices into an organisation but that means changing the way people behave. It was from that angle where I said if you want to move to more effective way of deciding and doing you have to change people's behaviours, that's the underlying thing. In achieving change in people's behaviours, the CIO could use the HR director as an ally. You will probably find, that of all the other executives the [HR director is the] one who will find it most easy to understand the fact that it's behavioural issues that are the barriers to organisational effectiveness. And even if you might only be narrowing your issue around effectiveness to how do you do IT strategic planning, it's still the same problem. You can't use a blended model like the organisational model [an approach to SISP identified by Earl 1993] if people won't work together. If everyone insists on sitting in their ivory tower and making their decisions within their control and ignoring everyone else then a collaborative model doesn't work (T1, para. 13).

Is what you're saying is that alignment to a large extent is about affecting changes in people's behaviours? (Interviewer)

Improving alignment almost always involves changing behaviours. Yes! (T1, para. 15).

When transcribing the interview I made the following memo at this point:

My existing model of 18/10/04 [see Figure 6.1] does not explicitly include a change management or behaviour change variable. What T1 appears to be saying here is that by developing relationships he is attempting to change the behaviour and world views of other executives (I also know this from other informal conversations I've had with him.) But, this also seems to be true for other people I've interviewed eg T6. At a macro level, it appears that the developing of relationships affects the perceived role of IT. This is, in effect, changing the world views and behaviours of executives and employees in other functional areas. It is also affecting

the shared domain knowledge of all actors, which in turn probably has an affect on behaviours.

The foregoing indicates two issues surrounding *leadership*:

Firstly, the senior manager must have a vision of what the organisation, business unit or functional area is attempting to achieve (depending on the location within the organisation of the manager).

Secondly, the manager must be able to change people's behaviour and *world views* (or *mental models*) to affect change and achieve the vision. In this respect, change management has been defined as '*...the process by which strategy is actually implemented, and by which changes are actually made to happen*' (Garside 1998, p. S8). There is also support for T1's view that changes of mental models and behaviour must be implemented at an individual level before it can be changed at unit level (Schein 1996; Senge 1990).

The major issue here is that if a senior manager has a limited mental model and vision it constrains the decisions and actions that can be made by lower level managers. For example T8, T15 and T16 all indicated that the CEOs of their organisations had a view that IT was a cost centre. This, then, constrained the actions of senior IT managers to reducing the costs of IT operations. As their organisations had a poor history of IT business relations, it was also very difficult for these managers to form the relationships that T1 is arguing are necessary to change the mental model, and vision, of other managers. All three of these IT managers said that convincing senior business managers that the IT function could provide more than just a basic service at minimal cost was extremely difficult as they were unable to even engage in a discussion. This is discussed further in a following chapter where the response of IT managers to alignment is investigated.

The previous quotation and accompanying memo also indicates that *leadership* is influenced by the *mental models* held by those leading as well as their knowledge outside their domain within the organisation – *shared domain knowledge*. These influences are added to the model developed in Figure 6.6 and shown in Figure 6.7, below. Earlier evidence indicated that *leadership*, or lack thereof, can influence the *development of strategies*. This connection is also shown in Figure 6.7.

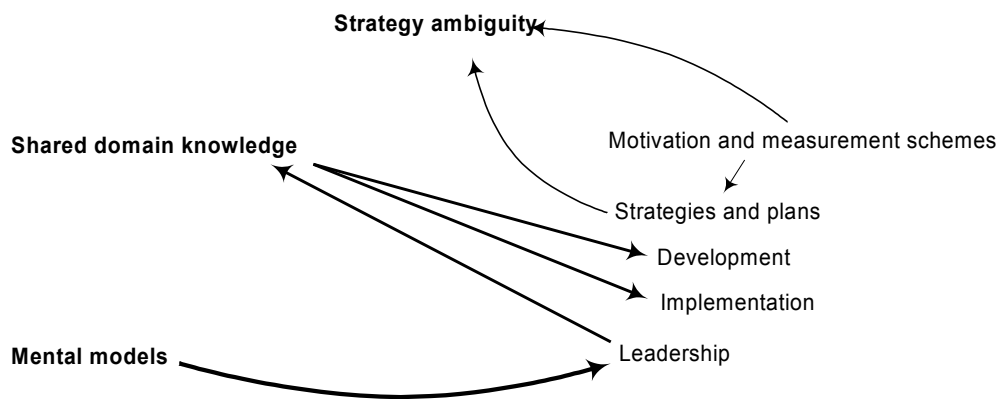


Figure 6.7. Shared domain knowledge and the mental models of senior management influence their leadership which, in turn, can influence strategies and plans

6.4.2 Commitment to, and Consistency of, the Message

When discussing leadership M1, a member of the business managers focus group, said:

...one of the things that doesn't enable IS/business alignment is that you have the pretend view of 'Oh, we'll enable you. We'll empower you. Do things outside the box', then soon as you do – whack! (para. 319).

This was the first of many instances provided by participants of managers either not acting consistently with what they said, or not demonstrating commitment to the publicly communicated strategies. T1 also provided an example of an inconsistent message:

If I tell you this is a collaborative environment and my door is open, and when you walk in the door and I slap you around 'Why are you bothering me. It's a waste of my time!' That's an example of inconsistent message and that will piss people right off straight away (para. 80).

But he went on to say that an inconsistent message could be more subtle and may actually be done in innocence and with the best intentions. He provided an example then analysed an earlier experience using his example:

But sometimes it's actually a communication type of things. 'We believe this is the way of the future, but because of the pipeline effect of the new product development, for the next six to twelve months there's still going to be lots and lots of this sort of stuff coming out while we turn the ship around.' And then in six months time that balance will start to shift, and in twelve months time it will be all the way over here, because it's a big ship and it takes a long time to turn. Matching the action of what people see to what people hear might have been all that was missing. It might just have been a communication thing. The fact that that might have been what happened has only just occurred to me now. This is four years after the fact! And I sat there. I'm thinking of one particular session at a corporate quarterly session when they got up and told us what the new corporate plan for the next twelve months was going to be and they said all of these things and I went back to the office and had a look and saw what was actually coming out and thought 'what's going on here?' (para. 87).

The last comment in this passage indicates that an inconsistent message regarding strategy can create ambiguity for those people attempting to enact that strategy. In this respect it constrains their decisions and actions as managers are more likely to act on what they see is happening rather than acting on the message (Kerr 1995).

T7 indicated that an inconsistent message could also be due to the performance measurement schemes being applied. She said:

*I think you have to have the right type of leadership in terms of the people in the key positions being appropriately incentivized [to be] supportive of the goals. So I think its fairly undermining when you have people in key positions who are clearly not supportive of those goals. I think it is probably critical for an organisation to have the right people in the positions to be **visibly** seen to be supporting those goals and to be **visibly** seen to be incentivized correctly. Because you might have three goals but if the managing director is only*

incentivized on one of them you know where his focus is going to be. So why would you expect anyone else to focus on the other two? So I think clear incentives and visible support of leadership is probably part of it as well (vocal emphasis was placed on the word 'visibly' by T7, hence the boldface) (para. 130).

There were other instances where an inconsistent message was very blatant and far less benign than the situation described by T7, above. M3 described a situation he encountered in his previous position as a CIO:

...the strategy in action was just completely different to the quite sanitized one of 'we want to be this' sort of thing and leading innovation, but then cutting absolutely every single innovation program that was to help them, and not funding anything. And so that created a lot of confusion and problems in the business. If you followed the [official] strategy you got your head kicked in (para. 35).

It appears, then, that **measurement and incentive schemes** not only influence **strategy implementation** but may influence **leadership** as well. This is shown in Figure 6.8.

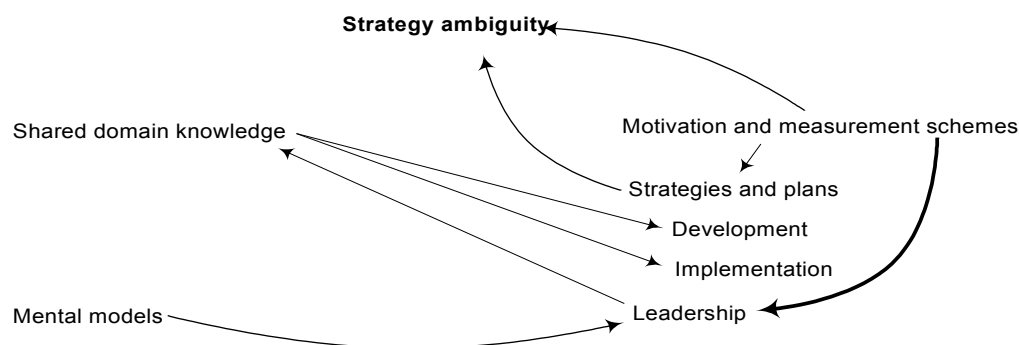


Figure 6.8. Motivation and measurement schemes may also influence leadership

The major concern of the subjects of this research is the ambiguity created by the difference between the espoused strategies and those they can see being implemented. Following up his statement, above, M3 said:

We had a lot of difficulty dealing with the business partly because they refused to acknowledge that they had an agenda other than the stated plan (para. 65).

All of the preceding discussion would indicate that basing IT strategies on business plans, as has been recommended in the IS literature (King & Teo 2000) could be fraught with some danger. Only three of the participants of this research (M1, M4 and T7) indicated that the companies that they currently worked for made a conscious effort to link official strategies with performance measurements to ensure they were implemented as intended. As reported earlier, even then there were issues with implementation. The remaining participants did not explicitly state one way or another whether their organisations endeavour to ensure the implementation of official strategies. Their discussions would indicate that there are some real difficulties in this area that then make aligning IT and business strategies very problematic. There was one further aspect of leadership that subjects inferred could create ambiguity for IT managers when they had to make decisions and take action. This was the effect of leadership style on the actions of less senior managers and other employees.

6.4.3 Leadership Style

It appears that some senior business managers encourage competition between business units and managers in an attempt to promote efficiencies and performance. In this regard the tactic may be effective, but one result can be business managers concentrating on the measurement of their own or their unit's performance. Some examples of this have already been provided in the earlier section on motivation and measurement schemes. Another example was provided by T13 during the first focus group session:

We've got branches, and we've got products we are trying to put out. New South Wales branch get in trouble for trying to work with Victoria, or South Australia or Queensland branch to provide a focussed information kit... to potential clients. If they're crossing those borders they have to really justify it. So there's bunker mentality – New South Wales branch against Victoria branch. I've come across this a lot in the last few months, and I'm just thinking it makes no sense. So, as far as IT and business alignment goes, one of the main

inhibitors may well be divisions within the business as well, not just IT (para. 116).

The IT function providing a service to multiple business units appears to be a common practice in the organisations represented in this research. It seems to be the case in the example just provided. The problem of this for IT managers was articulated by T10:

We've a number of business units to support and we're sort of getting pushed in different directions. I haven't seen a single strategy document that dictates exactly what we are to do (para. 148).

This provides some evidence that **leadership style**, and in particular how senior management promotes efficiency, can therefore influence the level of **strategy ambiguity**. Figure 6.8 is therefore updated to reflect this further influence and shown in Figure 6.9. Although it could be argued that it is actually the structure of the organisation in the previous quote that is influencing strategy ambiguity, it is assumed here that it is senior management's decision on how, and why, an organisation is structured in a particular way. This is part of leadership. Subjects of this research did raise the issue of organisational structure and its ability to affect communication, learning and collaboration. It has therefore been included in the locus of comprehension and is discussed in the next chapter.

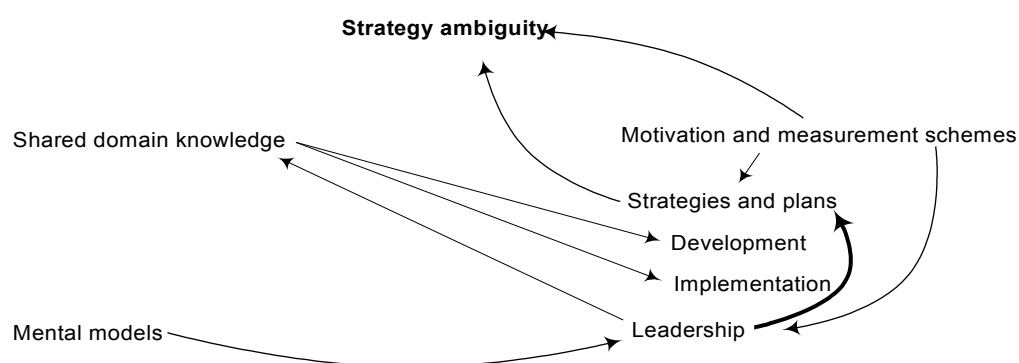


Figure 6.9. Leadership can influence the level of strategy ambiguity

Participants also made a number of isolated comments about the personal leadership style of both business and IT managers although the evidence I have is very fragmentary. Essentially the comments related to the ability, or not, of a manager to

relate personally to subordinates and whether they adopted a controlling or mentoring style of leadership. When considering these issues T1 said that:

It's a pretty fundamental thing about leadership. How are you going to treat the people? What do you think of your people? And what do you expect of your people? Do you expect them to be robots? Here's three laws. Follow the three laws to their disastrous conclusion. Or do you see them as making sensible choices, sometimes inaccurate, but sensible choices and learning from the experience as they go? And my experience has been that when you put two teams side by side operating on those two different modes the contrast is stark, and it's so stark you wonder why people still do the old hierarchy stuff. But they do. And it's like Earl's model (research by Earl, 1993 into SISP approaches) – you line up the different ways of doing SISP and you say 'OK, here's the characteristics of the five models. Which one would you pick?' The differences are so stark it's almost 'why do we need to talk about this anymore?' We do because even though the differences are very real, real enough for people to feel them, it's not how people operate (para. 63).

T1 then went on to say that, in his experience, using a mentoring approach to leadership provided more knowledge, via feedback, of what was happening with employees. He argued that the little control that the mentoring approach provides could then be applied more effectively.

It was the effect of leadership style on the ability of a manager, or employee, to make choices and take action that was the concern of participants who raised this issue. It is another example of how the choices and actions of a manager, particularly IT managers, are constrained. For this reason leadership, and its sub-categories, have been included within the locus of control as shown in Figure 6.10.

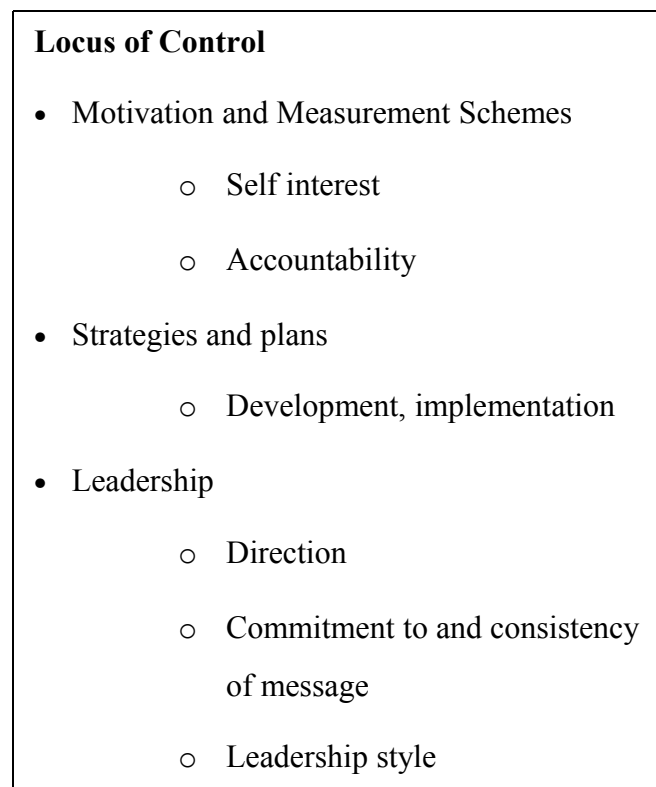


Figure 6.10. The addition of leadership and its sub-categories to the locus of control

There was some evidence provided by participants that a particular leadership style could be identified with particular organisations and that this was associated with a particular response from the IT function when attempting to support business strategies. This is investigated further in the chapter that addresses the responses of IT managers to strategy ambiguity.

Although my subjects were primarily concerned with the effect of *measurement and incentive schemes*, and *strategies and plans* on the choices and actions of business managers, they indicated that *leadership* applied to both business and IT managers equally. They also indicated that *IS status* constrained the choices and actions of both business and IT managers equally, but in different ways. This is now explored.

6.5 IS Status

In this research *IS status* and its sub-categories was the most discussed of those factors that affect a manager's (especially an IT manager's) ability to make choices and take actions. A low *IS status* can constrain the actions that an IT manager can take, often restricting actions to supporting a basic, low cost, reliable IT service that

provides little, if any, competitive advantage to the business. Conversely, a low *IS status* tends to dissuade business managers from *communicating* and collaborating with IT managers, isolating the IT function and making a change in the above scenario extremely difficult.

The concept of *IS status* emerged slowly from my data. It did not appear in either the first model I constructed on 18 Oct 2004 to document my understanding of the relationships between codes I had used during open coding (see Figure 6.11). Nor did it appear in the second model of 30 Jan 2005 and included in the previous chapter as Figure 5.2.

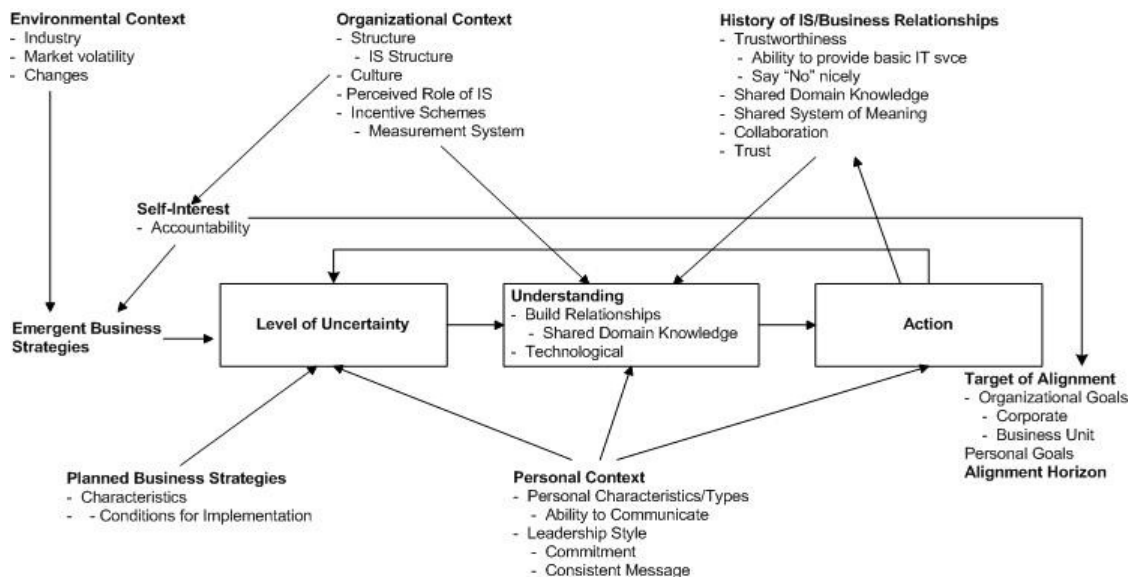


Figure 6.11. Perceived relationships between codes identified after initial open coding

However, I eventually realised that many of the codes included in the model shown in Figure 6.11 and, in particular, descriptions provided by subjects were similar in concept to the factors of IS status identified by Avison et al. (1999). *IS status* is at a higher conceptual level than the other codes identified in my data and in grounded theory terms is a theoretical code or category as it did not emerge directly from the data.

As data collection and analysis progressed it appeared that the *history of IT/business relationships*, including people's attitudes, affected the *perceptions of IT* held by the business. This, then, tended to influence the *perceived role of IT* which to some

degree determined IT *governance*, *autonomy* and *authority*. In presenting IS status this section is therefore structured in the following way:

- History of IT/business relationships
 - Attitudes of people
- Perceptions of IT
- Perceived Role of IT
 - Governance
 - Autonomy
 - Authority

The influence of *communication* and *shared domain knowledge* on *IS status* is highlighted. But this situation is recursive - a positive feedback loop is evident, where an improvement or erosion of either *IS status* or *shared domain knowledge* will create a corresponding improvement or erosion in the other.

6.5.1 History of IT/Business Relationships

Similar to many of the other concepts identified in this research, the *history of IT/business relationships* was raised very early in the first data collection session held – the first focus group of IT managers. The participants of this focus group immediately commenced their discussion by highlighting the importance of *communication* and developing *relationships* to enable alignment. This is consistent with the literature which tends to identify communication as one of the most important critical success factors to alignment (Luftman, Papp & Brier 1999; Reich & Benbasat 2000; Teo & Ang 1999). Similarly, there is abundant literature indicating that the development of relationships between business and IT executives is important in improving alignment (for example, Chan 2002; Feeny, Edwards & Simpson 1992; Reich & Benbasat 2000). These particular authors maintain that one of the major benefits of effective relationships is that IT managers gain an understanding of what is happening within the organisation and can then make appropriate decisions to support the goals of business executives. However, the participants of this research were not all at executive level and indicated that they were attempting to support the actions

and goals of their business peers which were not necessarily those of the executive. This, and other reasons for developing communication and relationships, is discussed in the chapter on the locus of comprehension.

Having immediately raised the importance of communication and relationship development, the members of the first focus group then went on to discuss the effect of the history of IT/business relationships on this endeavour. Within the first minute of commencing this focus group discussion T13 said:

... things are already in place with history. Things that happen in the past and it takes a very professional view to get past mistakes and bad experiences and still work together in the future (para. 14).

This section of text was coded as **history**. It was the first of many. It indicates that the **history of relationships** between IT and the business, and the perceived performance of the IT group, can affect the ability of managers from both areas communicating and developing relationships. This was further explored by T11 later in the same focus group:

... the current philosophy in our [IT] group is... very conflict oriented. There's a whole history of things that have gone sour and many people and managers are very defensive (para. 50).

In an individual interview T2, the CIO of a large Australian fast moving consumer goods manufacturer, had a slightly different view of IT/business history. He maintained that such functions as human resources and finance are much more ingrained into the business model and psyche because they have a longer history within business. His argument is that IT, being a new discipline, is still not understood by business managers and is therefore seen as being more 'outside' the business model than other functions. The result, according to T2, is:

... technology is still seen as being separate. It's still the mystical thing. It's still a little bit 'black boxy.' It's still 'that's the IT guys sitting over there, and we don't want to talk to them and they don't want to talk to us. And they're propeller heads and we don't understand what they do but, oh shit, we better humour them a bit.'

There's a bit of that still, and it's not just about the strategy bit. It's about the whole engagement (para. 126).

This quote, and the text preceding it that provided the context, was also coded as **history**.

When asked about the relationship between the IT group and the business T15, a very senior IT manager within a large Australian financial institution, responded:

Improving! Some of the business units have created their own IT areas which are not part of IT because they were not happy with the service being provided to them. ...others are quite dependent on IT [group] and the relationships are improving, I think, over the last 12 months... We have put on 4 business unit CIO's who are there to work directly with the business unit heads to improve relationships and the services. So, I would have to say that it is improving from a pretty poor base in the first place (para. 2).

Both T15 and T16¹³, who are employed by the same organisation, were interviewed together as I had prior experience of their effectiveness as a team having attended a seminar they delivered at my own institution. T16 then elaborated on the history of IT within their organisation:

It's that budgetary cycle. It's a yearly review even though it's supposed to be a strategy, the projects happen within a year. So people are always looking for money to do what they have to do for the business this year. It's not a long term view. So, a lot of that is based on our history, back when a number of events occurred in the early 90's [this organisation had a major IT project failure during this period which, together with a number of unrelated poor business decisions, almost led to its bankruptcy]. Confidence in IT was lost and so a lot of autonomy was removed from the IT organisation and so the

¹³ As an indication of their positions, T15 and T16 are part of a 'CIO Challenge' within their organisation. Their task is to change the attitude of IT (and eventually business) managers and personnel regarding the role and management of the IT function. This is not trivial as there are some 1,600 IT personnel within the organisation with an IT budget of USD\$800million per annum.

account [function] basically came in to drive IT and took a lot of the business management out of it. A lot of that appropriate risk taking out of it, out of the IT organisation. So that's why at the moment it's like 'Here's a project. Fill that order and deliver something' (para. 18).

Much later in the interview T16 elaborated on the above situation by saying that, as a result of the events of the early 1990's there was:

... a real lack of confidence in IT and basically that ability to self-manage was taken away from IT. It became a cost centre. It was stuck under the Chief Finance Officer for the organisation to be managed by accountants (para. 50).

It can be interpreted from these three quotes that the IT group within this financial organisation is not perceived as competent to manage its own affairs. It can also be seen that this history was making communication between IT and business management more difficult than it need be. The appointment of business unit CIOs is a tactic to improve this situation.

A similar situation was reported by M3. He was asked whether he was aware of the IT strategies within his current organisation. His response was:

To a degree. In this organisation I'm on the business side, so we are only getting it through the formal meetings and communications. IT here right now is split into two. One is the traditional IT shop, the support and the like. They've been here for a long time, a lot of people... I think 12 years is the average length of service in the team. That's about 10 years and 6 months too long. They're not well regarded. They're seen as dysfunctional, closed and not communicating. And I would be most surprised if they communicated their strategy to anyone. And then we've got a completely separate team, which is probably telling, set up to role out a major ERP system. And they do communicate their strategy very well.

The highlighted section of this quotation was coded at *history*. Other sections were coded at *communication formality*, *perceived responsiveness*, *trustworthiness*, *network ties*, and *structure of IS*. It should be noted that M3 later explained that the second IT group actually consisted of business managers and analysts and IT consultants. It did not contain any of the IT personnel employed by the organisation (the Australian branch of a very large multi-national consumer goods manufacturer). This situation, where the internal IT group is by-passed during major projects, was reported by a number of respondents but only where poor *relationships* existed between IT and business groups and where the *perception of IT* held by the business was poor. The question, then, was how could this situation arise? It was this type of question that was always in the back of my mind whilst analysing data. The emerging theory should be able to explain why these situations occurred.

It can be interpreted from this quotation that M3 believes that the internal IT group is non-communicative and dysfunctional. But, he later indicated that the internal IT group was, indeed, attempting to communicate with the business by producing reports that it believed would be useful. These reports were being rejected by business managers, including M3, because they emanated from the IT group. They were not seen as trustworthy and the contents and validity of the reports was being questioned. When asked what tactics the IT group was using to try to achieve alignment M3 replied:

Well they are starting to put out a bit more communication. It's something that's happening in other areas of the business too, because this sort of problem isn't unique to IT but a tactic that all areas are now starting to put out information to people. Unfortunately they're [the IT infrastructure group] not going to a lot of effort to create credibility in that information. They're not showing where they get their statistics from. They're just putting out some wonderful looking tables and statistics without really justifying how they got

there and so nobody's believing it. The other thing they're doing is slowly moving towards putting in things most companies have enjoyed for the last 10 years but we don't have available here. And that is going to increase their credibility rating within the business as well. They're very hard to engage still. They have put in a help desk that's now effectively staffed and very effective. So, at desk top level they are starting to get some credibility, but at the application level they're still very difficult to deal with (para. 53).

Parts of this quotation were coded at: perceived **responsiveness, communication barriers, communication enablers, trustworthiness, and credibility.**

These, and the earlier, quotations indicate that the **history of IT/business relationships** can affect the development of personal relationships between IT and business managers. There appears to be a feedback loop here. A poor **history of IT/business relationships** and dealings can limit the amount of **communication** between managers (a pre-requisite to the development of **relationships**). The low level of **communication** and resulting weakness of **relationships** then means that the **perception of the IT** group held by the business is also likely to poor¹⁴. This, then, reinforces the existing history. The opposite can also occur. An existing beneficial history of IT/business relationships (or good conditions in any of the other variables) can lead to a virtuous cycle. Part of an early memo written on the 6th May 2004 reflects a realisation of the importance of these links:

I have tentatively created a node called "history" (currently unpopulated). This reflects the history of communication between two parties. It is influenced by their personal history, as well as the history of the groups to which they belong. In the latter respect it could be allied to "Norms". If a norm has formed within an organisation that two groups don't communicate or collaborate it will affect the ability of members of these groups to communicate. See Johnson & Scholes "myths and stories" from their cultural web method of investigating organisations.

¹⁴ I differentiate between 'communications' and 'ability to communicate'. The latter is related to a person's character and whether that person is comfortable communicating and developing relationships with others. As communications is a necessary pre-requisite to the development of personal relationships it is subsumed into that category.

A ramification of this situation is that where a poor history is in place, it will be difficult to improve the situation. This is the experience of T15 and T16 who indicated in a seminar (not recorded and transcribed as part of the data collection for this research) that they are having difficulty “turning the ship around” in their attempt to encourage the management of IT as a business within the organisation. This is similar to the situations described by Avison et al. (1999, p. 427) when they discuss the stories that are told within an organisation regarding an IT group and how these can then influence managers’ decisions on future roles for that group.

A history of poor *IT/business relationships* inhibits both groups in communicating and developing *relationships*. The foregoing quotations indicate that where a section of transcript was coded at history the same, or closely located, text was also coded at other categories such as *trust, credibility* and *communication barriers*. It appears that a history of poor IT/business relationships erodes trust and IT credibility. This, then, discourages business managers from communicating with their IT peers (and vice versa). This is consistent with the trust, relationships and social network literature (Lewicki & Bunker 1996). These authors (pp. 128-133) discuss the conditions necessary to repair trust, communication and relationships within a business context. One of the pre-conditions required is that the violator of the trust must accept responsibility for his or her actions before trust, communication and relationships can be re-established. But who is the violator in our situation? Business managers will often say it is IT for project failure. This is reflected in the experience of T16, above. But, according to T1 (interview of 4th March 2004, para 149) it can be that IT is set up for failure by projects that are way too ambitious. T1 provides evidence of this from a previous position:

One of the biggest things was that the projects were way too ambitious [for the prior experience of the organisation]. So the business’ expectations were miles beyond what was really achievable and it wasn’t that it was individual failure. The projects were due for disaster from the day they started. And sure, if the project teams had been more effective they might have reined that in earlier, but it was right back at the start saying ‘guys, we’ve got to walk before we can

run.’ And you’ve got to be able to sit down and talk to people to be able to do that (para. 103).

Does this mean that business managers are the violators in the eyes of IT by giving them an impossible task? The end result is that it appears that no-one wants to be first to attempt to re-establish trust, communication and repair damaged relationships so perpetuating the existing situation.

The influence of the history of IT/business relationships on the development of personal relationships is shown in Figure 6.12. As the previous discussion indicated that the history of relationships between the business and IT also influences the development of trust and credibility, and vice versa. This bi-directional influence is also shown in Figure 6.12. As I argued earlier that the *history of IT/business relationships* forms a part of *IS status* it is shown as such in Figure 6.12.

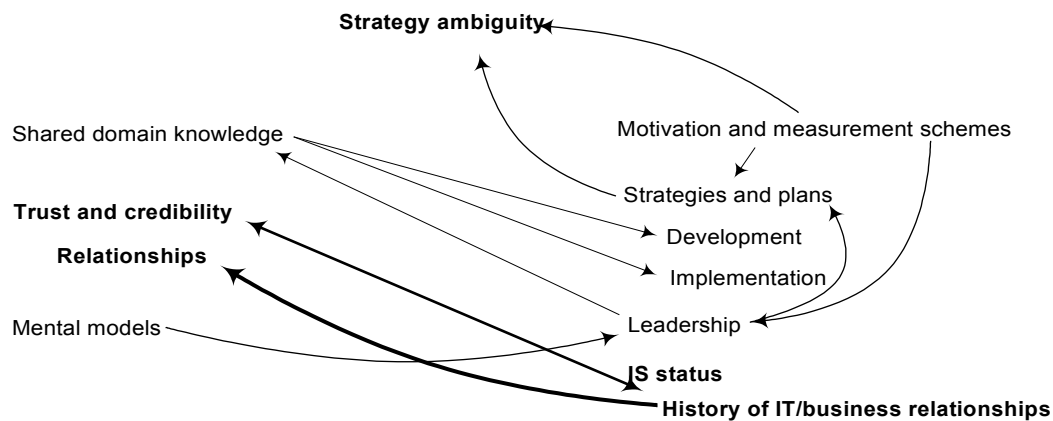


Figure 6.12. There is mutual influence between History of IT/business relationships and communication.

The significance of IT/business relationships for the emerging theory was that it could limit the actions available to a manager. An existing good history can encourage communication and collaboration, whilst a poor history of relationships can inhibit the development of communication and collaboration. In the last quotation from T1, above, this means that IT managers may not have the option of sitting down and talking to their business peers to avoid the situation of an over-ambitious project.

However, it also became apparent that the *history of IT/business relationships* could also influence the *perception of IT* held by both the business and the IT group itself. The perception of IT is now discussed.

6.5.2 Perception of IT

This variable refers to the IT section within a business unit and not to individual IT personnel. Initially the *perceived credibility* (or trustworthiness) of the IT unit by the business were coded separately but were eventually included in *perception of IT*.

In the research methodology chapter I indicated that the focus groups were asked two primary questions then allowed to self manage the session. This was done to avoid interviewer bias and the introduction of preconceived constructs of how alignment operated. One totally unexpected result of this was that IT *credibility, trustworthiness* and *perceptions of the IT* unit were not raised by business managers in their focus group. This seems to be at odds with existing research that indicates a poor perception of IT held by many business managers as a result of implementation failures (Bashein & Markus 1997; OASIG 1996). They did, however, discuss the perceived role of IT within their organisations and this will be discussed shortly.

During an individual interview M3 was asked whether he was familiar with the IS strategies within his organisation. Answering this question and referring to the IT group, M3 responded:

They've been here for a long time, a lot of people. I think 12 years is the average length of service in the team. That's about 10 years and 6 months too long. They're not well regarded. They're seen as dysfunctional, closed and not communicating. And I would be most surprised if they communicated their strategy to anyone (para. 48).

This section of transcript was initially coded at both perceived responsiveness and credibility. M3 was then asked what tactics the IT group was taking to improve alignment. He said:

Well they are starting to put out a bit more communication. It's something that's happening in other areas of the business too, because this sort of problem isn't unique to IT but a tactic that all areas are now starting to put out info to people. Unfortunately they're (the IT infrastructure group) not going to a lot of effort to create credibility in that information. They're not showing where they get their stats from. They're just putting out some wonderful looking

tables and stats without really justifying how they got there and so nobody's believing it. The other thing they're doing is slowly moving towards putting in things most companies have enjoyed for the last 10 years but we don't have available here. And that is going to increase their credibility rating within the business as well. They're very hard to engage still. They have put in a help desk that's now effectively staffed and very effective. So, at desk top level they are starting to get some credibility, but at the application level they're still very difficult to deal with (para. 54).

The dark shaded area of the above quote was coded at **trustworthiness** whilst the light shaded area was coded at **perceived responsiveness**. Almost the entire quote was coded at **credibility**. Initially I was not sure whether any of these codes could be important in their own right. Eventually, as I continued coding other transcripts and the theory emerged it became clearer that they all relate to the **perception of the IT** group held by the organisation and they are now included in the code perception of IT.

The last two sentences of this quote are telling. They indicate that the IT group is concentrating on the delivery of a reliable service but not addressing business applications. M3 indicated that the IT function is considered a cost centre by his organisation and it is therefore measured on how well it contains its own costs, not on the value it could bring to the organisation. During this particular section of the interview M3 also indicated that his organisation had a second IT group. When asked how this group operated M3 replied:

The other group is a project team so it's really about delivering this project and then they're going to go away and vanish. Its got a mixture of business analysts from within the business, people from a very large consulting firm, people from smaller consulting firms, a professional project manager. But because it's a project it's under full blown serious project management. This project is worth about \$30million so it gets a lot of attention. And so you get regular updates, communications, briefings and they push that out to the

business too. I've just been doing some briefings for our team that I was given from their change management group. It was 'here is the information you need to communicate about us to the business'. So they use the local managers as the voice to give credibility to what they're doing (para. 56).

When questioned further about this situation M3 indicated that: the internal IT group was not involved (it appeared it was never given an opportunity to become involved) and; the project was willingly 'owned' by business managers who had a vested interest in seeing that it was successful. The project was the implementation of an ERP system and according to M3 business managers see:

*... the ERP project as **the** business project. It's not an IT project. It just happens to have a very strong IT component and influence, but it's about the business and the way each part of the business is going to change it, and the way it influences customers. The IT group is seen as a cost (para. 162. M3 placed emphasis on the word in boldface).*

The foregoing quotes appear to indicate that business managers do not willingly 'own' the projects currently undertaken by the internal IT group. The opposite appears to be the case – they seem to remove themselves from any interaction with the IT group who then tend to “retreat and be in denial” (M3, para. 126).

It appears, then, that the internal IT group was not being given the chance to improve its credibility and performance 'at the application level'. Other participants (T8, T15, T16) indicated that this situation is not uncommon in some organisations. An interpretation of this is that the perception of the IT group held by the rest of the business can, in fact, limit or control the actions of the IT group. If the perception of the IT group is poor it appears that it is unlikely that the group will then be asked to undertake tasks that could improve that perception. Some IT groups become caught in a catch 22 situation. But, the IT group could also be the victim of actions that are calculated to maintain the current perception of IT. Continuing his discussion of the internal IT group within his organisation M3 said that CEOs can:

... set project timelines that are just unrealistic. The project is going to fail before you even start and that will just reinforce the CEO's, the

CEO who set the timeline, that will reinforce his view that you can't trust IT and that they are all idiots and that he should outsource it (para. 172).

T1 also gave evidence of this type of action occurring in his current organisation when he said that:

One of the biggest things was that the projects were way too ambitious [for the prior experience of the organisation]. So the business' expectations were miles beyond what was really achievable and it wasn't that it was individual failure. The projects were due for disaster from the day they started. And, sure, if the project teams had been more effective they might have reigned that in earlier, but it was right back at the start, saying 'guys, we've got to walk before we can run'. And you've got to be able to sit down and talk to people to be able to do that. You can't sit in a corner of an office and issue a strategic plan to do that for you. You've got to actually get out there (para. 149).

These quotes, and those before them, indicate that a feedback loop is created. The **history of relationships** between the business and IT, together with the **perception of IT** held by the business, affect both the level of **trust** between the functions as well as the **mental models** of IT held by senior management. These in turn will to some extent dictate the **perception of IT** and also tend to maintain the existing relationship between the business and IT. It is then difficult to improve these variables where they are poor.

6.5.3 Perceived Role of IT

The discussion and quotes in the previous section also indicate the perceived role of IT held within various organisations. For example, in many organisations IT is seen as a cost centre with its main objective, according to the business, being to reduce its own costs. It quickly became clear that this situation occurred where there were:

- low levels of trust between the business and IT;
- a history of poor relationships between these groups, and;

- there was a perception that IT was not helpful, was not credible and was, in effect, dysfunctional.

When investigating the CEO and CIO relationships Feeny, Edwards & Simpson (1992) found that “*the single most powerful discriminator in our study was that labelled “CEO attitude toward IT”*” (p. 440). All of the CEOs that had developed an excellent relationship with their CIOs had a vision that IT could be used to transform their organisation or the industry.

All of this then reinforces the *mental models* held by personnel within an organisation. A number of authors have indicated that a part of a person’s mental models include his beliefs and that beliefs are extremely difficult to change. Both mental models and beliefs can be maintained for long periods of time even in the face of contradictory evidence (Senge 1990; Vennix 1996). But the situation then becomes more complex. Vennix (1996, pp. 18-21) discusses a phenomenon where a group, such as the IT function, perceives that it is stigmatized by another group (other business functions in our situation). The group that perceives that it is stigmatized then modifies its behaviour to suit that situation. In our example, if the IT group perceives that the business sees it as untrustworthy, unhelpful and uncommunicative it will then tend to withdraw, reducing the chances of meaningful communication that is essential to improve trust, shared system of meaning, shared domain knowledge and encourage collaboration. That is, in a situation where IT is seen as dysfunctional by business units, both groups (business and IT) will tend to adopt actions that reinforce the existing belief system creating a self-fulfilling prophecy. The earlier quotes from M3, T8, T15 and T16 tend to support this argument, although M3 indicated that the IT group within his organisation has recently attempted to break the deadlock but with little success.

The data collected in this research does not indicate how a situation arises where the IT group is seen as a cost centre. However, the quotes in the earlier sections indicate that a number of other phenomena will be present where this has arisen. I can say with reasonable certainty that where IT is seen as a cost centre, then:

1. There will be little communication between business and IT and therefore little opportunity to develop personal relationships

2. There are low levels of shared system of meaning, shared domain knowledge and trust
3. The IT group has little authority, with its actions being controlled by others, usually the chief finance officer
4. The IT group has little autonomy, with most of its budget tied to specific projects which have been decided by the business without consulting the IT group. That is, the IT group is not involved in strategic planning
5. The IT group will be seen as unhelpful and uncooperative and will be unwilling to provide extra services or support as they add to its cost.
6. There will be little synergy between projects as each is seen as separate.

T15 and T16 indicated that there are a number of ramifications of the last point. It increases the overall cost of IT as there is little consistency of the various IT architectures. Also, the primary concern is the cost of development with little regard for ongoing expense. In a joint interview T15 and T16 provided evidence of the above. When asked for his opinion of the business' view of IT T15 responded:

... what I've picked up on in the last couple of years has been the usual 'You're too expensive, and you're slow. You are a cost centre. You will do as you're told.' So in terms of value add, the perception is that there is not a lot of value add there, given you are just a cost centre to serve my whim... IT tends to focus on itself rather than on its customer and hence the perception of the business is 'Well, you are just costing me money. I have the capability here, I have the budget to do what I wish to do' (para. 9).

T16 then elaborated:

... there's a whole lot of enterprise costs that haven't been made apparent or allocated to various business units. So what usually happens is each business unit has its profit and loss and what happens is the inefficiencies of the IT organisation or the approach the business has had is hidden behind that, until a major event comes

along like, all of a sudden we've got a whole lot of stuff out of support, or we've got Y2K type things.

The IT group within their organisation is attempting to move to a more collaborative style and has recently appointed CIOs to each of the main business units. T15 then gave a specific example of the type of problem that can occur when IT is funded on a project basis.

John C came in as the new business unit CIO. First thing he did was go to the business unit and say 'You need to invest \$23million in your infrastructure because you have let it degrade up to this point, because there's been no view to the long term.' Bang! - 'What's the cheapest option? Let's just do it.' ...what do you think they said to him when he went to them and said you need to \$23million to upgrade your infrastructure? The relationship wasn't all that flash, but it's improving. It's always short term, what's the cheapest way to implement.

These quotations indicate that the IT group in this organisation has little authority together with little autonomy. This situation was similar in two other organisations within this research – those of T8 and M3. These four participants specifically mentioned this situation within their organisations. The remaining IT participants did not specifically raise these two aspects. It is assumed, then, that they were not of much concern to them. This becomes important when considering the responses to strategy ambiguity identified and described in Chapter 8.

The foregoing sections indicate that there are lines of influence between communication, *relationships*, *trust and credibility* and the *perception of IT* (as a part of *IS status*). This then affects the *history of IT/business relationships* and so influences the *mental models* of both IT and business managers. These mental models then reinforce the *perceived role of IT* in the minds of both business and IT managers. As a part of *IS status* the latter then affects the ability of managers from both business and IT units communicating and forming *relationships*. The lines of influence

identified above are shown in Figure 6.13¹⁵. There is a positive feedback loop operating in this section of the model. This means that, for example, IS status will either continuously improve or deteriorate over time unless actions by actors can reverse the situation. The earlier discussion indicates that this will be difficult.

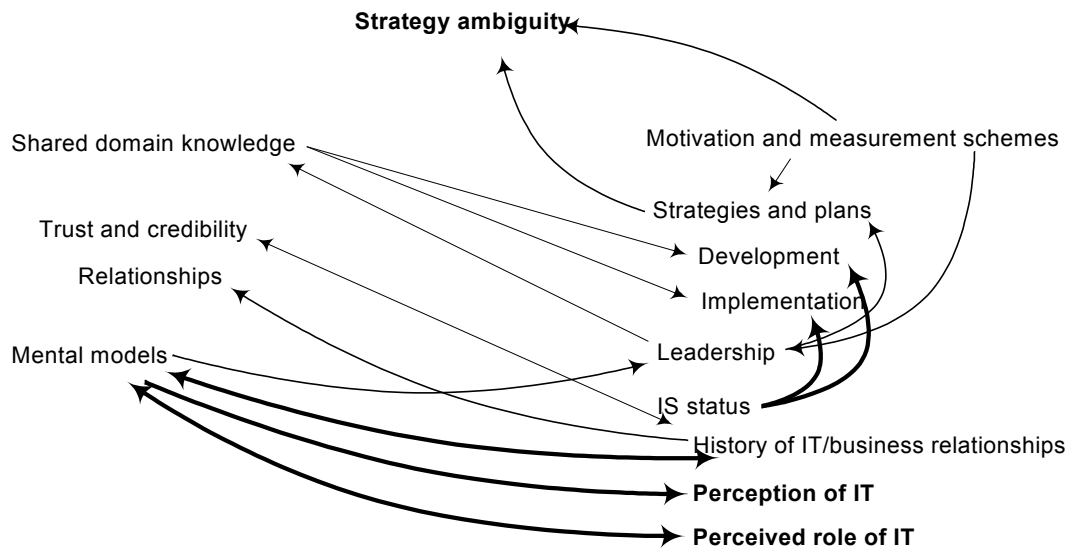


Figure 6.13. The properties within IS status influence, and are influenced by, the level of personal relationships, trust and credibility, and the mental models held by managers.

Although I have identified the development of relationships, or not, as the indicator that distinguishes the two situations, I do not imply that it causes these results. The lines of influence shown in Figure 6.13, and the nature of self-fulfilling prophecies, means that the value of any of these variables may have created an initial perception that is then reinforced over a period of time. For example, participants indicated that some CEOs have little interest in IT and tend to ignore it. Other managers may then pick up on this and limit their communication with the IT group. Other participants referred to ‘typical IT people’ who tend not to communicate particularly well and tend not to form relationships. This may be enough, in a new organisation, to create the initial environment to encourage a situation where IT is eventually seen as a cost centre. This is probably exacerbated in small to medium enterprises where IT managers are often selected on their technical ability rather than their ability to

¹⁵ In an attempt to simplify the model not all direct lines of influence as described are shown in Figure 6.13. In some instances lines of influence are shown to the major category (IS status) rather than to one of its properties.

communicate and contribute to business direction and strategy (Gramignoli, Ravarini & Tagliavini 1999).

Although the interaction of variables described above makes it extremely difficult to change an established view of IT within an organisation all managers should be aware of approaches by others to alter the situation. T4 described such an opportunity in his organisation:

... we had a managing partner who started the drive, that process, who started to want things done. And we did one or two little steps, and the next thing you know, IT was dragged into 'All right, this is what we want to happen. Do this' and then discussion happened (para. 39).

Earlier it was noted that the IT group within M3's organisation was making tentative steps to be more responsive to business needs by delivering statistical reports that they thought would be useful. M3 indicated that these were being rejected on the grounds of suspect validity. It could also be argued that, instead of criticising the validity of information being proffered by the IT group, business managers within M3's organisation should be working with that group. By doing this they could then get the information that they actually want and need, and could be sure of its validity. This, then, could be the catalyst to change the existing relationship between the two groups. As it stands, the actions of the business managers are maintaining the existing situation.

It is clear, then, that those variables within IS status also tend to constrain, or bound, the decisions and actions of IT managers when they are faced with strategy ambiguity and are dealing with other business units. There are therefore added to the locus of control and shown in Figure 6.14, below.

Not all of the variables in Figure 6.13 are included in Figure 6.14. Those variables shown on the left hand side of Figure 13 tend to constrain, or bound, a manager's ability to comprehend a problem situation. They are therefore included within another major theoretical category that I have called the *locus of comprehension*. These, and other, variables are discussed in the next chapter.

6.6 Summary

This chapter has demonstrated that there are numerous factors, or variables, within an organisation that limit the decisions and actions that can be taken by business managers. These decisions can lead to the strategy ambiguity that is the major concern of IT managers when considering alignment. These, and other, variables also limit the decisions and actions of IT managers when responding to strategy ambiguity.

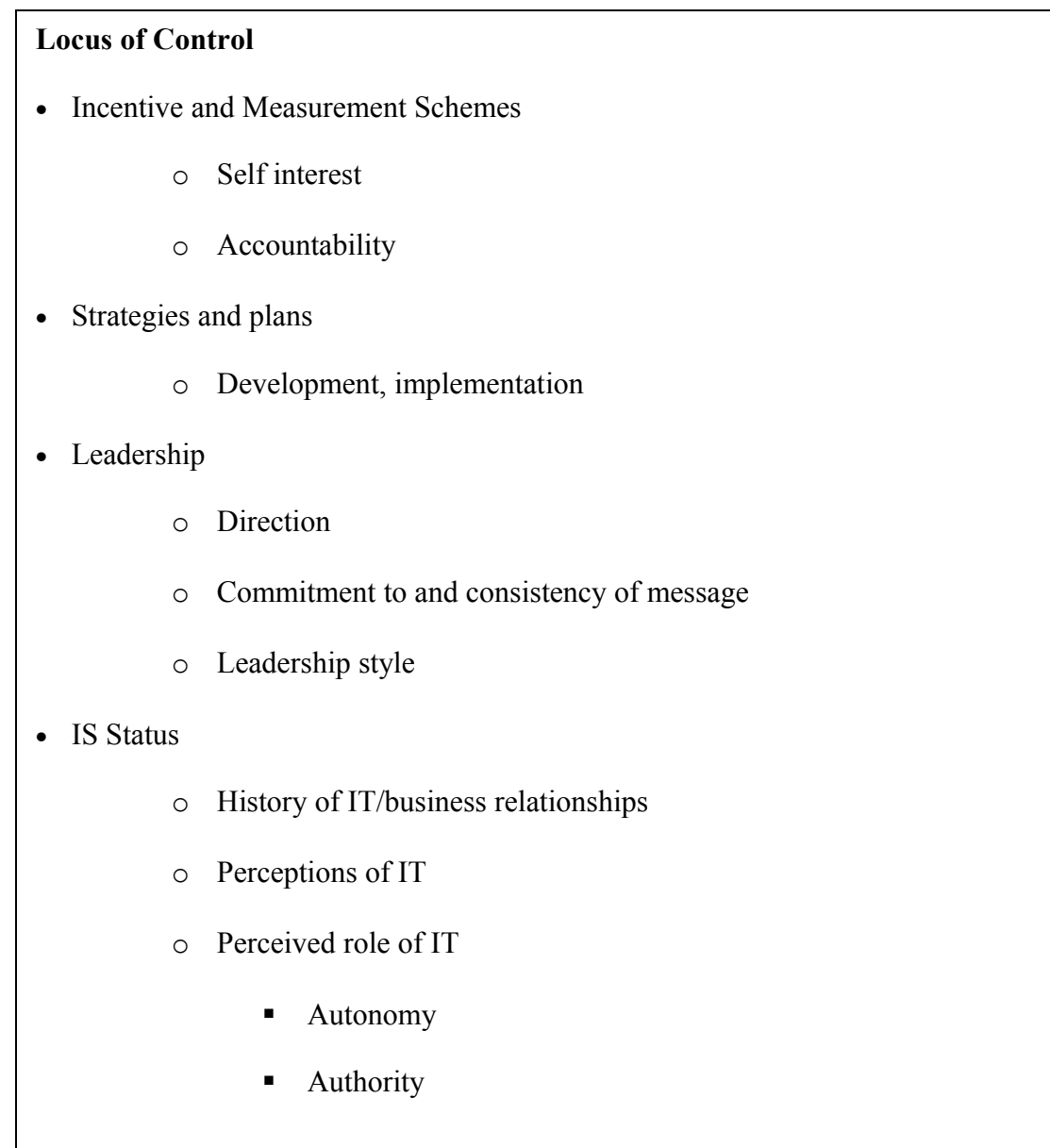


Figure 6.14. The locus of control and its sub-categories

It was also noticed that there are another set of variables that limit the ability of managers to understand a complex problem situation before they make a decision or take action. These are discussed in the next chapter.

7 The Locus of Comprehension

7.1 Abstract

The previous chapters discussed a number of themes that were identified within the data. These include:

1. The concept of alignment in use by the participants. This was equivalent to the definition of strategic alignment used within the literature;
2. The core problem of participants when addressing alignment (the ambiguity surrounding business strategies);
3. The variables that tend to limit the decisions and actions available to managers when attempting to align their actions to business strategies (whether those strategies be either formal or emergent). I have named this group of variables the locus of control.

During analysis I identified another group of variables that tend to limit a manager's comprehension of a problem situation – in this instance the ambiguity surrounding business strategies. I have named this group of variables the locus of comprehension.

The coding family being used within this grounded theory study, the interactive family, encouraged the discovery of mutual dependency and interaction between variables. This chapter, then, identifies those variables that limit a manager's comprehension of a problem situation whilst concentrating on the interaction and dependency between them.

Three major categories of variables were identified. A number of sub-categories were also identified and these are shown in the list below.

- Shared domain knowledge
 - Shared system of meaning
 - Trust and credibility
 - Relationships
 - Ability to communicate
 - Organisational structure
- Mental models

The figures of interaction and dependency developed within the previous chapter in regard to the locus of control will be extended in this chapter. This, then, indicates the interaction of variables that limit the comprehension of a problem situation, then limits the decisions and actions that are available to managers in addressing the problem.

It is continuously argued that the interaction and dependency between variables means that improving a single variable to improve alignment (as often recommended in the literature) is unlikely to succeed in the short term.

7.2 The Locus of Comprehension

Most of my participants indicated a need to understand what was going on in their organisation so that they could base their actions on that understanding. This is reflected in a memo and model developed on 18th October 2004, shown below in Figure 7.1, which was an early attempt to understand the alignment process.

Over a period of time I started to realise that “understanding” was more than a logical process conducted by participants after they collected information. Participants “understand” their situation within the context of their own position, experiences and culture. I therefore started to use the term comprehension as an indication of the sum of all the attributes that make up the content of understanding (The Macquarie Dictionary *The Macquarie Dictionary* 1988). It therefore includes the knowledge of the business by IT managers that has been identified as an important enabler of alignment (Luftman & McLean 2004, pp. 97-98).

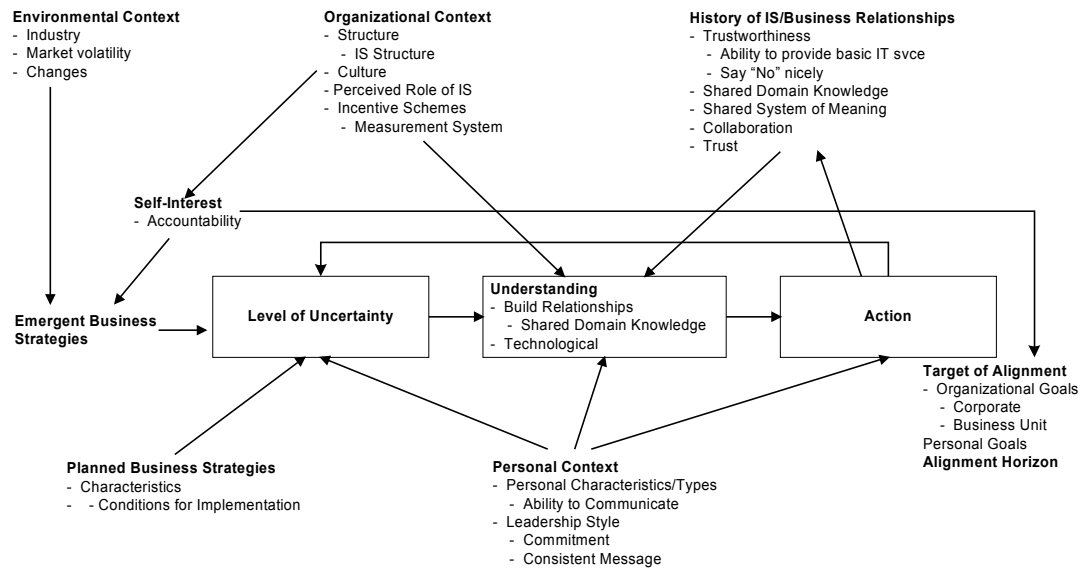


Figure 7.1. Model of the emerging theory developed on 18th October 2004.

The model shown in Figure 7.1 starts to indicate the web of influence between the variables involved in comprehending a complex situation. There has been a tendency in the IS literature to assume that the influence between many of the variables involved in the social dimension of alignment (which is primarily concerned with understanding) is linear in nature and this has created a situation where there is inconsistency between papers (Campbell, Kay & Avison 2005). Below I present what I consider to be the major variables involved in a manager's ability to understand a complex situation. Although they are presented linearly for the sake of simplicity, it should be remembered that as a result of my analysis I now find it difficult to think of one without thinking of them all concurrently. They are all tightly linked in a complex web of influence.

7.2.1 Shared Domain Knowledge

Earlier research has indicated the importance of shared domain knowledge to both alignment (Reich & Benbasat 2000) and IT performance (Nelson & Coopriider 1996). The former authors defined shared domain knowledge as *“the ability of IT and business executives, at a deep level, to understand and be able to participate in the others' key processes and to respect each others' unique contribution and challenges”* (Reich & Benbasat 2000, p. 86). An earlier chapter on the core problem identified within this research indicated that the publicly accepted goals and strategies of managers may not be those actually being implemented. Providing we

acknowledge this, then the definition of social alignment provided by Reich & Benbasat is acceptable as it stresses the need to understand these issues at a deep level.

Reich & Benbasat (2000) found that whilst a number of factors they investigated had a positive influence on short term alignment only shared domain knowledge was found to influence long term alignment. Similarly, Nelson & Coopriider (1996) found that shared knowledge was a pre-requisite to improved IT performance. However, there is some debate on how the various factors actually interact to influence either alignment or performance. Reich & Benbasat (2000) developed a linear model from existing literature to identify the antecedents to alignment but they admitted that the influences could actually be recursive rather than linear. Research from other disciplines into similar areas question the validity of the model they developed. For a discussion of some of the issues surrounding this area see Campbell, Kay et al. (2005). The argument being made in that paper is that the influence between factors is, indeed, recursive. This argument will be further demonstrated in the following presentation.

Most managers participating in this research wanted to gain an understanding of what was happening within the business so that they could make appropriate decisions. For IT managers the appropriate decisions were often in connection with setting IT goals and strategies as well as identifying and prioritising projects so that they aligned with business goals. They indicated that they received most of the information they needed to understand their problems via informal relationships. An example was provided by T1 who was reflecting on his CIO role:

It still comes back to having information about what's really going on, and having information in a timely enough fashion to be able to make reasonably intelligent decisions to alter the course of events. And that comes from not just knowing what's going on in the IT department but knowing what's going on in the broader business and even outside the business. And the real information doesn't come through formal channels. It never does (para. 32).

The need for information via informal networks was elaborated by T7, an IT line manager:

How do you know if what you're doing is in the right direction if you don't have these relationships? You develop the networks, you develop an understanding of what the business wants, or the strategy that is required. If you didn't have the relationship you couldn't be in alignment, because what would you be in alignment with? You wouldn't know anything (para. 94).

The first of the IT managers, above, is responsible for setting IT strategy in his role as CIO whilst the second (from another company) is responsible for implementing IT strategy. However, the quotes indicate that both still rely on informal networks, rather than documented strategies (which were present), to obtain an understanding of the business and the goals of their business peers so that they could then align their actions with those of their peers. This was a common theme among many of the participants. Many of the IT participants indicated that they were attempting to understand the business and its environment. This is similar to the use of the term 'shared domain knowledge' which has been used to mean that IT managers are knowledgeable about the business and business managers are knowledgeable about IT (Reich & Benbasat 2000, p. 84). It also indicates that understanding, or *shared domain knowledge*, impacts *strategy ambiguity*. The latter increases if there is a lack of understanding or shared domain knowledge.

Both the preceding quotes are indicative of a common theme among participants. They were attempting to understand, at a personal level, the goals of their peer managers. This has been reported by Feeny et al. (1992) as being one of the indicators of a good CIO and CEO relationship and is closely related to the definition of the social dimension of alignment provided by Reich & Benbasat (2000). It would appear from the second quote from a lower level IT manager that the ability to understand the goals of your peer manager at a personal level is not just an indicator of a good CEO and CIO relationship as argued by Feeny et al. (1992), but may be an indicator of a good relationship between managers at any level of an organisation.

The participants indicated that there appears to be a double standard at work when considering shared domain knowledge. IT managers are expected to understand the business, but there does not appear to be the same expectation that business managers understand IT. This was highlighted by T1 when he said:

I think in my experience the CIO tends to be in the most awkward position because... the one with the highest expectations. They're the one who's expected to understand the financial issues, understand the marketing issues, understand the people issues whereas many of the other functional areas feel that there's not so much pressure on them to understand IT or anyone else's functional expertise... There's no reciprocal expectation. So you can quite easily be sitting down with the CFO and they expect you to be able to read a balance sheet. And so you should be able to if you're going to be an executive. But there's no expectation that a CFO should be able to read a project plan which is almost, to my mind, the equivalent document for the IT professional compared to a balance sheet for a CFO (para. 8).

In another part of the interview T1 stated that:

I've also worked in organisations where IT was the lifeblood of the company, but it wasn't an IT company. And what really struck me in those organisations was that a lot of the business managers really didn't want to know what IT was about (para 85).

This seemed to be a common theme reported by participants and reflects research reported elsewhere (Reich & Benbasat 2000; Teo & Ang 1999). For example, Teo and Ang (1999) reported IT knowledge of the business was ranked #2 of 18 critical success factors for aligning IT and business plans. However, business managers' knowledge of IT was ranked at #10. Additionally they quoted earlier research (Armstrong & Sambamurthy 1996) that indicated that there was no linkage between the knowledge of IT by senior management and the extent of IT adoption. Significantly, the research reported by Teo and Ang (1999) does not appear to investigate the effectiveness of that adoption.

However it could be that the experiences, above, reported by many of the participants of this research may be biased due to their location within Australia. According to recent research *“In a survey of the top 200 Australian companies, Talent2 found fewer than 5 percent of directors displayed any level of knowledge enabling them to provide support and guidance in IT strategy, and fewer than 3 percent have CIOs on the board”* (Gedda & Pauli 2006b). One of the respondents quoted by Gedda & Pauli said that *“there is reluctance by corporate management to understand IT... They are good at demanding [the IT department produces] without understanding the realities”* (text in brackets in original). Gedda & Pauli then went on to indicate that, by contrast, one in fourteen of the biggest companies in Europe have CIO’s on their boards.

7.2.1.1 Shared System of Meaning

The business managers focus group also discussed the need for shared domain knowledge and a shared system of meaning. One of their criticisms was the narrow focus of most courses within Australian universities. This, according to M1, resulted in a situation where:-

sitting around the boardrooms of big companies today, you have people who are financed trained, tech trained, so you’ve got a CFO a CIO, various other directors all of whom bring... ‘we employed him because of his retail experience’. Well that’s great, but what else does he have. Well, nothing. He has nothing else. And so you have got a culture of silos and they sit there and think. ... until you’ve broken down that attitude that accountants become CFOs that IT graduates become CIOs and business or operations people become COOs, you’re going to... [M1 interrupted by another member of the focus group] (para. 52).

A similar concern was raised by T1, but he extended the thought by saying:

Maybe one of the issues is that people who are in those senior roles within a functional area are there, to a large extent, from their success in their functional area. And, for whatever reason, that sort of blindsides them from being able to take someone else’s perspective.

So, an HR director might not be able to see why their input is crucially important to an information systems plan and vice versa (para. 6).

A similar situation was reported by M1 in the business manager's focus group when she said:

... the company group chairman says 'We need to look at e-commerce enabling technology in this space' and the marketing people start tearing their hair out and say 'Well, product X needs a web-site.' That's not really what we're after. We're after something that makes a business process reengineering concept that happens with technology (para. 24).

T1 then gave an example from his own experience. At the time T1 was the CIO of a book publishing firm and as part of his job was interacting with editors. He gave this example of a lack of a ***shared system of meaning***:

A big case in point was the use of the term 'process' which I thought was a pretty obvious sort of term to use. Everyone can look it up in a dictionary to find out what process means. A sequence of steps towards an outcome. And everyone can agree that makes sense and they don't need any special training to understand that. But the concept that that term has applicability to someone who is trying to edit a book is a foreign concept for an editor who has never worked in that environment. And what's more, and this was something I tripped over, was that the main barrier to them understanding the concept, because intellectually it's pretty straightforward, is that emotionally describing what they do as a process to them was turning them into production line workers when they saw themselves as creative people (para. 34).

Earlier research indicates that a manager will tend to interpret a problem situation using the implicit assumptions that operate within his functional area (Vennix 1996, p. 17). This situation is not likely to improve until shared domain knowledge is developed to a sufficient level. The participants of this, and earlier, research indicate

that improving *shared domain knowledge* is dependent on a *shared system of meaning* and the development of personal *relationships*.

The quotes above were coded variously at *shared domain knowledge, understanding* and *shared system of meaning*. This was not an unusual situation demonstrating the linkage between these concepts. Initially I differentiated between understanding and shared domain knowledge as participants seemed to be talking about two separate concepts. When using the word ‘understanding’ they were mostly talking about their own understanding of a problem situation – what was going on and, therefore, what could they do to help the situation. This is shown by the first quote by T1. They also tended to discuss the technical knowledge a manager should have of functional areas other than his own. These instances were coded at shared domain knowledge.

Similarly, other sections of text were initially coded at learning, multi-skilling, and fields of expertise. However, given the definition of shared domain knowledge from Reich & Benbasat (2000) these codes were eventually merged into a single code of shared domain knowledge.

The above quotes also highlight the importance of a shared system of meaning between managers. The first IT focus group provided an even more graphic example of issues surrounding this concept with the following exchange between participants:

T9: *I'm technical, right, and I understand everything about the system. I pass it on to the director who is not technical. He will get, maybe 25 percent of the thing. Now that 25 percent gets passed on and maybe*

T13: *And 25 percent of that 25 percent gets passed ...*

T9: *And at the end of it the actual reasons, or objectives, that we started off with, what the system is going to be doing it gets very vague by the time it gets up to ...*

T14: *It loses its focus ...*

T13: *Yes.*

T14: *Do you think, then, its actually part of your job to try and bring it down a level so this person understands it enough to be able to pass the information on. Or ... to be less technical*

T12: *Take out the IT speak, and just tell me what the business benefits are!*

T9: *That's what I've done. I couldn't have gone any more simple than that.*

T13: *That's your view that it's simple. If they're only picking up 25 percent of what you've got, are you communicating effectively?*

T11: *Can you bring it back to something like, "This will be a reduction in 5 full time employees to you" or "this will return \$2million per annum" or something like that? Or do you talk about response times and, you know, that kind of thing. What are you explaining it in? Because they're not looking at response, they're looking at "what's my head count".*

T9: *Don't take me wrong. I put it down in the best form I can, because I know unless you touch some things differently so I go into all these things, what this system is going to do and how much cost saving its going to do, and also the fact now that we're doing the internet age and we should be doing something that uses the internet rather than traditional telephone. That's because that's where the costs are. I think that where the problem is that these directors, one of them, he is focussed so he doesn't want to go into something...*

T13: *Just sell him!*

T9: *Yeah, and then the other one is...*

T13: *Doesn't matter what, just sell it! Is that too bottom down?*

T9: *So there is a communication gap.*

Facilitator: *What you were saying before, does that mean that you think that the issues that are important to business are different to the issues that are important to the IT people?*

T13: *Oh definitely.*

T12: *Well, I don't know that they're actually different. I think we're probably all driving towards the same concerns, but we don't communicate. So that IT is developing a system to achieve the same things, but that's not what they're communicating to the business people (paras. 95-113).*

This exchange indicates that a shared understanding was not occurring between T9 and the business manager(s) he was communicating with.

A similar sentiment was expressed by T6 in an individual interview when she was asked what she considered to be the three major enablers of alignment. Giving her second most important enabler, T6 responded:

The ability of IT staff to understand business issues and communicate new things in the language of the business. So, not just talking in bits and bytes, but talking in terms of strategic direction and enabling that stuff to happen (para. 145).

These quotes indicate that shared domain knowledge is unlikely to occur without a shared system of meaning which is dependent on communications. Managers indicated that they understood this connection and, where they could, actively worked towards developing both a shared system of meaning and thence shared domain knowledge. T1 gave an example:

In any sort of communication for it to be effective you've got to understand how it's seen by the person receiving the communication. So, it's not just a throw it over the fence type of issue. It's a case of, I'll pass it to you, see what you do with it and catch it back and see what it looks like when I get it back and see if that was some approximation of what I hoped for. And when its not, which often it won't be, then I'll learn and change the way I deliver my message,

maybe. Some people you use pictures, some you use words sort of thing. It's an active communication thing (para. 19).

The above quote is from T1 but illustrates an issue raised by the participants of the first IT focus group who were involved in a series of group causal-loop modelling sessions. They differentiated between normal communication and effective communication, their argument being that shared domain knowledge and relationships may not necessarily follow from normal communication. They defined effective communication as that which resulted from an ability to influence the decisions of peer managers. According to these practitioners, effective communications could then allow the development of networking opportunities, shared domain knowledge and collaboration. They maintained that the latter then led to an improvement in IT credibility (Campbell, Kay & Avison 2004). It is quite possible to communicate regularly with other members of your organisation but not develop a shared system of meaning, shared domain knowledge or a relationship. T1 elaborated on this situation thus:

Not everybody sees the world and sees communication that way. For some people communications are around making each other feel good and the result is secondary. And if you're not aware that that other person's in that communication style, and you're forever wanting to talk about the doing things and they're forever wanting to talk about feeling things, you will find it very difficult to come to any agreement on anything (para. 22).

The above indicates the close relationship between shared domain knowledge, shared system of meaning, relationships and communication. It appears that none of these can develop without the others. For example, just communicating with peers is not sufficient. Managers must communicate with the objective of improving the other variables.

It appears that shared domain knowledge is dependent, to a large extent, on the development of a shared system of meaning. This in turn develops with the development of relationships between peer managers – as a relationship develops so does a shared system of meaning and vice versa. These lines of influence are now

shown in Figure 2 which is a development of Figure 13 from the previous chapter. The influence of shared domain knowledge on strategy ambiguity is also shown in Figure 2.

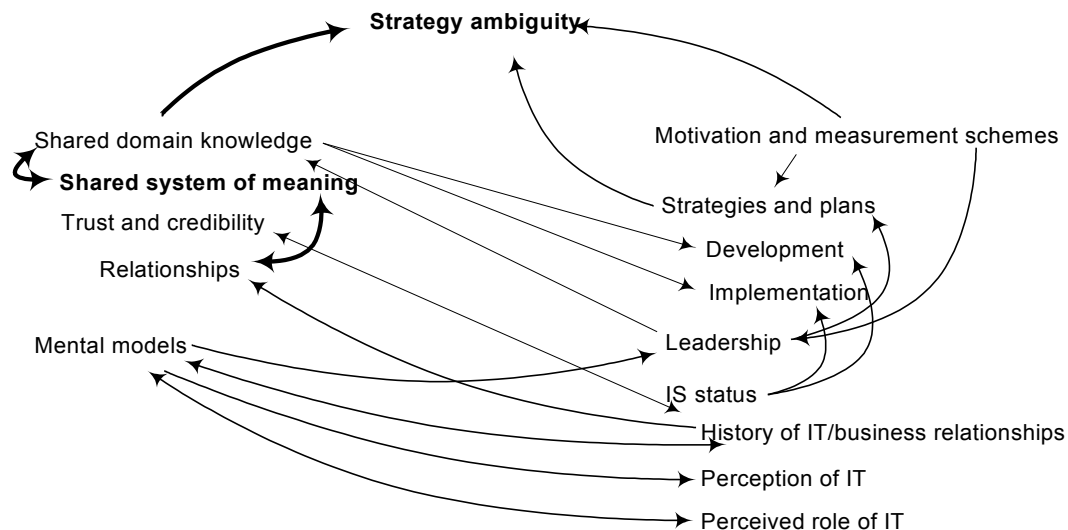


Figure 7.2. A development of Figure 6.13 from previous chapter showing the mutual influence between shared domain knowledge, shared system of meaning, and relationships

7.2.1.2 Trust and Credibility

The importance of developing *relationships* and communicating was raised within the first minute of the first data gathering task of the research, the first IT focus group. All participants reiterated the importance of relationships and communication when attempting to attain strategic alignment. This is reflected in the IS literature (see, for example, Chan 2002; Feeny, Edwards & Simpson 1992; Reich & Benbasat 2000; Teo & Ang 1999). But, managers indicated that there were other reasons for developing relationships which then impact strategic alignment. According to T1 developing relationships is about:

... a trust thing. That's what the relationship is about. It's building trust to a point where when you hit a road block in the communication you've got something to come back from, to rebuild from. ... relationships kept the channel of communication open for when there was a problem. So it's not that something goes down railroad tracks and never comes off the path, things always come off the path. It's about how quickly and how accurately you get feedback...

Within an organisational context trust can be defined as

“an individual’s belief or a common belief among a group of individuals that another individual or group (a) makes good-faith efforts to behave in accordance with any commitments both explicit or implicit, (b) is honest in whatever negotiations preceded such commitments, and (c) does not take excessive advantage of another even when the opportunity is available” (Cummings & Bromley 1996, p. 303).

The quote from T1, above, indicates that trust is generally developed via relationships and this is supported by the literature on organisational trust (Lewicki & Bunker 1996). Other authors have argued that relationships and trust develop via a number of mechanisms. One of these is the similarity of characteristics of those involved. That is, the development of relationships and trust is easier if those involved have similar backgrounds, religions, age, social position and so forth (Burt 1992, p. 60; Creed & Miles 1996, p. 18). It could be argued that if two managers have similar background and experiences then trust is more likely to occur. This is supported by the experience of T6 a senior IT manager within a government department. When discussing the development of trust and relationships T6 said:

I came from operations originally. I started in the operational area and moved into the kind of policy area and then became a business analyst and a tester. So, even though I’ve been working in IT longer than I was working in the operational area, I’m still seen as not having been raised in that environment. So, I think that has a lot to do with the trust we have [with business managers] (para. 124).

M3, a former CIO, had a slightly different interpretation of the reasons for developing effective relationships:

One is to build credibility and to be able to contact people when you have a problem or need help on something in a non-threatening way. So when you sit down and speak to them they will give you a hearing rather than being defensive and being able to discuss things clearly and openly. I think it’s the relationship you build that allows that to

happen. You create the credibility and trust for that requirement to happen. ... you get the credibility and people believe you and then you get support [this last sentence has been paraphrased but the meaning has not been changed].

These quotes reflect earlier research in the sociology (Lewicki & Bunker 1996) and IS (Bashein & Markus 1997; Nelson & Coopriider 1996) literatures investigating the links between communication, relationships, trust and credibility. This literature has indicated that repetitive positive communication is a necessary condition for the development of both trust and relationships. However, once either of these has been established it is likely that both will then improve in a feedback cycle – providing nothing occurs to damage the trust that has been developed. However, as discussed the trust and relationship literature also indicates that trust is most likely to occur when people have a similar background or belief system. Most functional areas support the business. IT supports a technology that supports the business. This is one reason so many IT managers find it difficult to communicate with, then form relationships with, their business peers. M3 indicated during an informal discussion of these issues (not recorded) that this situation is typical of other technical areas of an organisation such as logistics.

Once relationships and trust have been established it is then possible that a shared system of meaning and shared domain knowledge can be developed. It may also be possible to change a person's mental models in this situation. M3 maintains that:

Your personal relationships, your personal credibility, you build first and then they can look through with a different, with a more open mind. Because, what you do in a network is break down people's prejudice (para. 140).

The participants of this research used the terms 'trust' and 'credibility' almost interchangeably. As an example, many participants argued that if they could demonstrate technical expertise this then enhanced their trust and credibility. Reflecting on his previous role as the CIO of a small telecommunications company M3 maintained that "the runs you get on board are very important." When asked why, M3 responded:

Because it gives you credibility. you then get left alone to do the next project. And when you say it's going to take six weeks, people will accept it takes six weeks. They won't try to bargain you down because they know that's a fair and reasonable estimate and they will trust that. I mean, it comes back to that little trust thing again and where that fits into the picture I think is terribly important in an organisation (para. 168).

It is a common belief that trust and credibility of IT is developed through technical expertise (Bashein & Markus 1997) and one that was demonstrated by the subjects of this research. Subsequent to the first IT focus group the participants were invited to develop a causal-loop model of their understanding of how alignment was achieved within a typical organisation. This group modelling exercise has been reported elsewhere (Campbell, Kay & Avison 2005) and was used as exploratory research to gain an overall understanding of the alignment process from a practitioner's perspective. The six IT managers who participated in these sessions (the same six who participated in the initial focus group session) developed a model that indicated that trust and credibility could be developed via two different mechanisms. These participants indicated that the first was, in their experience, dominant in most organisations and concentrated on the technical expertise of IT personnel and their ability to complete projects on time and within budget. The second relied on the development of effective communications, relationships, shared domain knowledge and collaboration between peer managers. These particular managers, none of whom were at the CIO level, indicated that even although they recognised the superiority of the latter method of developing trust and credibility most of them did not actively engage in developing relationships with their business peers. This is serious for three reasons:

Firstly, the research by Bashein & Markus (1997) indicates that business managers believe that trust and credibility is primarily developed via relationships. They do not place as much emphasis on the technical expertise of their IT personnel in the attribution of credibility.

Secondly, the causal-loop model developed by the six IT managers demonstrated that it is almost impossible to substantially improve trust and credibility over the long term by concentrating on successfully completing projects. In the experience of these practitioners a series of successful projects results in increased requests from the business but without a corresponding increase in resources. Subsequent projects are then likely to fail due to inadequate resources, leading to a loss of trust and credibility. That is, the level of trust and credibility oscillates within a narrow band of possible values (Campbell, Kay & Avison 2005).

Finally, if IT managers are not actively engaged in developing relationships with their business peers then there is little likelihood that trust, credibility, shared system of meaning and shared domain knowledge can improve.

By concentrating on their expertise, IT managers are involved in the development of calculus-based trust which, according to Lewicki & Bunker (1996, p. 119) is the lowest level of trust than can be established between two parties within an organisation. It is based on “*assuring consistency of behaviour; that is, individuals will do what they say because they fear the consequences of not doing what they say*” (ibid. p. 119). In our context, many IT managers fear the consequences of not completing a project on time and within budget hence concentrate on refining the skills required to avoid failure.

Conversely, those managers concentrating on the development of trust through relationships are developing, at minimum, knowledge-based trust which is based on “... *the other’s predictability – knowing the other sufficiently well so that the other’s behaviour is anticipatable. Knowledge-based trust relies on information rather than deterrence. It develops over time, largely as a function of the parties having a history of interaction that allows them to develop a generalized expectancy that the other’s behaviour is predictable and that he or she will act trustworthily*” (ibid. p. 121). An example of a result of this type of trust is given in the last quote by M3, above, where he stated that business managers trusted his judgement on the cost and completion date of proposed projects. Compare this with comments in the previous chapter by T1, T15 and T16 that indicated that some IT groups are given impossible targets and are doomed to fail before they even commence a project.

7.2.1.3 Relationships

The inter-connectedness of relationships, communication and trust was demonstrated by T1 when he was reflecting on the importance of communication which he believed was a major enabler of alignment. T1 said:

It's almost guaranteed that in any series of communications there will be some misunderstandings. There's no perfect form of communication. So the issue is how do you deal with that, how do you prepare the ground for that. And the advantage of, if you've got a working relationship in place then you've got a context to say 'well that person has done something or said something or whatever that I don't agree with, or it doesn't make any sense to me or just seems completely off the planet.' In the context of a strong working relationship you can then say to yourself, well maybe I misunderstood or maybe something has changed. In the absence of that it's a case of what's this person's gain now? So it provides a fallback position to start again to rebuild the communication from. If you've got some sort of... it's a trust thing, it's a trust thing! That's what the relationship is about. Its building trust to a point where when you hit a road block in the communication you've got something to come back from to rebuild that from (T1, second interview, para. 26).

The general argument being made by authors within the book edited by Kramer & Tyler (1996) is that trust is an essential ingredient in the development of relationships. However a series of relationships forms a network that allows connection and collaboration between what would otherwise be isolated members. Like a computer network, social networks consist of nodes (people) within local area networks (clusters according to social network theory (Burt 1992)). Members within a cluster, for example an IT group, have similar education, training, experiences and beliefs on how the organisational system operates and are likely to interact socially. They are therefore likely to form strong ties – those characterised by relationships between close friends (Granovetter 1982). The weakness of strong ties within a cluster is that, as indicated earlier, all members will tend to hold similar attitudes, exhibit similar

behaviours and have access to the same information and knowledge (Burt 1992, p. 60). There is a resultant strong resistance to change.

Granovetter (1982) argues that it is the network of weak ties that is actually of most benefit to organisations. Using my previous analogy, a weak tie often connects two local area networks, clusters, via the relationships developed by managers from different business units and functions. The bridge that these two managers create then allows the information and knowledge from one cluster to be shared among members of the second cluster via the development of a shared system of meaning and shared domain knowledge. This is beneficial to both groups and to the organisation as a whole and has been positively linked to increased organisational performance (Burt 1992; Granovetter 1982; Nahapiet & Ghoshal 1998). According to all these authors the benefits of social networks are dependent on the development of trust between members of a cluster and between those members who form the links between clusters.

Most of the participants of this research project indicated that they spend considerable effort communicating and developing trust and relationships with their peer managers. An example at a low level within an organisation was provided by T6 who worked in a government department that had a number of regional offices. Projects are often piloted before being rolled out to the rest of the organisation. During these pilots T6 said that the regional offices:-

... like a weekly e-mail from me saying 'this is what's going on'. They don't actually need to know, but they just like that communication. I've a friend who works in the region who sends me back an e-mail just saying 'oh, by the way, they're talking about your e-mail and you got brownie points'. So he's feeding that back, saying they're happy. And they just like that. I think its my willingness to go to them and for me to put myself out to show that I'm committed to them, and secondly sort of continuous communication even when I don't think they need to know this for them to participate (para. 99).

T6 then went on to say:-

... I worked on a project a couple of years ago and it was because we neglected that social network that the project failed. What happened was that people were whingeing in the tea-rooms and we don't know about it. ... They won't share that information with people outside, and especially people from head office. So because we ignored what was happening was that there was whole lot of discontent that was festering that we didn't know about (para 103).

T6 further explained that she tends to target specific people with whom she wishes to form a relationship. Most other participants within this research reported doing the same thing with M3 (an ex-CIO) being particularly pragmatic in this area. He reported that when joining a new organisation he will carefully study the organisation chart to identify those managers whose collaboration is vital for his success. He then carefully nurtures relationships with those managers.

The discussion so far supports the work of Chan (2002) who found that the informal structure (relationships) is of more importance in alignment than originally thought. This is not surprising considering the importance placed on the development of relationships by CEOs (DeLisi, Danielson & Posner 1998; Feeny, Edwards & Simpson 1992). Chan restricted her research to the senior executive level within six organisations that had achieved high levels of alignment. She therefore only observed the informal networks developed at this level. The current research indicates that informal networks, or relationships, at lower levels of an organisation also impact alignment.

When the managers of this research were talking about the development of relationships with their business peers it took me a while to realise that that is exactly what they were talking about – the formation of relationships with **peers**. Although not explicitly stated by any participant it became apparent that when managers form relationships with others, those others tend to be from the same level within the hierarchy even though they may be from different functional areas or business units. This can be seen within most of the quotes so far provided. It could be argued that this is another example of the tendency of people to trust and develop relationships with people who are similar to themselves (Burt 1992, p. 60; Creed & Miles 1996, p. 18).

That is, a CIO is likely to form relationships with other executive level managers, whilst lower level IT managers tend to develop relationships with the business managers at their own level of the hierarchy – those with whom they have the most contact. An example of the importance of relationships was provided by T6:

... it comes down to the legitimacy we have within the organisation. And that's largely based on the personal relationships between the executive and our management. So that when that breaks down we've got real problems. And it's broken down before a few years ago, but it's quite good at the moment. I see that as the main groundwork for alignment. If that's not there, then it's really difficult to build on anything (para. 171).

The formation of relationships between peers has a dramatic affect on alignment. It is possible that strategies documented in plans and developed by senior executives who have established trust, shared domain knowledge, a shared system of meaning and an informal structure (relationships) show a high degree of alignment. This reflects the research of Chan (2002). If these same conditions have developed at lower levels of an organisation where strategies are implemented it is quite possible, indeed probable, that the actions of an IT manager are aligned with the actions of his business peer. Earlier I argued that business managers tend to modify, or at worst ignore, the formal strategies that have been developed by the executive. If IT managers develop relationships with their business peers to understand what the goals of those managers are, then any actions IT managers take are likely to be aligned with the strategies they can see are actually in use by their business peers. These may, or may not, reflect those developed by the executive.

It is possible, then, that strategies are aligned at different levels of an organisation but there may be poor overall strategy alignment. This clearly demonstrates an advantage of the research approach adopted here with the deliberate selection of managers from various hierarchical levels. Most prior alignment research has concentrated on the actions of executive level managers (see, for example, Chan 2002; Enns, Huff & Higgins 2003; King & Teo 2000; Reich & Benbasat 2000) considering strategy development but ignoring strategy implementation. However even some of these

authors (Chan & Huff 1992, p. 192) and others (for example, Ciborra 1997) have lamented the paucity of research into strategy implementation.

Reflecting on much of the above regarding the development of shared domain knowledge, relationships, shared system of meaning and trust, I wrote the following memo on 21st February 2005:

Kumar et al. (1998) distinguish between interactions and relationships (p. 214). They argue that relationships are cumulative over time, stable and long term in nature. Note, however, that they are talking about industrial relationships between firms.

The concept is still applicable to my research. There is a difference between “feel-good” interactions where there is little collaboration and those relationships that engender shared domain knowledge and collaboration.

Going on from this thought, are the concepts of shared domain knowledge and social capital similar? It could be that the IS literature has invented its own term to describe a well known phenomenon. This could be a result of the dominant epistemology in use in IS research – shared domain knowledge is conceptually simple, and easy to operationalise and measure.

The paper by Kumar et al. compares and contrasts the various theoretical lenses used to understand a problem. The first uses positivist ideas of socio-political and technical-economic theories. The second uses interpretivist research to assess the same problem. It suggests a third theoretical lens – collaboration and relationships using the ideas of trust and social capital.

Reading their paper I was struck that some of my interpretations of what is going on in alignment conform to either a technical-economic rationality (self interest and maximization of benefits to either an individual or unit), a socio-political rationality (choices bounded by actions taken by others, eg measurement and incentive schemes, political activity, history etc) and yet others guided by Kumar et al.'s collaboration and cooperation rationality (IS personnel ‘understanding’ the needs of business peers and working with them to achieve those goals).

Maybe we need to use all these lenses to understand a problem situation in its entirety.

Referring to the third paragraph of this memo I then added a comment on 13th April 2005 that said:

Social capital implicitly requires action. Shared domain knowledge does not and is therefore only part of the puzzle.

Notwithstanding this comment I have continued to use the term shared domain knowledge as it has become a de facto standard within the IS literature. However, I believe that we need to clearly define what we mean by this term. As the addendum to the memo above indicates, having shared domain knowledge is not sufficient – managers must then be in a position to act on it.

As a result of the foregoing discussion Figure 7.1 is now further developed to show the recursive link between Trust & credibility, and Relationships. The above discussion has shown that the development of relationships, and networks of relationships between managers, influences Shared system of meaning and this link is also included in Figure 7.2.

It can be argued that those IT managers who concentrated on developing their credibility via their technical expertise were not engaged in developing these social networks. Those managers who indicated that they were developing relationships were gaining the benefits of a social network for themselves and the business as a whole.

The existence, or not, of these social networks was a major differentiator between the two coping responses that IT managers adopted when confronted with strategy ambiguity. These responses will be described in the following chapter.

The participants of this research indicated that there were a number of factors that hindered effective communication. The first of these was the ability of a manager to communicate with a peer and this is presented next. Participants also indicated that an apparently common practice of isolating the IS group from the rest of the business also hindered the development of relationships, as could the mental models held by all managers. These latter two aspects will be presented later.

7.2.1.4 Ability to Communicate

The participants of this research indicated that there are two reasons for managers not being able to communicate. The first of these is related to the personality of the person involved. The second is a result of a culture that may have developed within the organisation.

Most participants referred, in one way or another, to “typical IT people” (T11, para 44) who either could not, or would not, communicate with their business peers. When instancing these IT managers most participants were referring to their personalities as the limiting factor in their ability to communicate. This is supported to some extent by the literature. Although the research is both old and generally consists of small samples both Teague (1998) and Couger and Zawacki (1980) found evidence to suggest that introverted people are over-represented in the IT industry compared to the overall population. A characteristic of introversion is a general inability to communicate easily and form relationships (Keirse 1978).

However, an inability to communicate and form relationships is not restricted to IT managers. A number of the IT managers within this project gave examples of business managers with whom it was difficult to communicate (T1, T6). When asked how they resolved this situation the general answer was that they targeted other managers in lieu of their preferred target. It eventually became clear that the preferred targets for communication and relationship building of the participants of this research were managers at the same hierarchical level as themselves. This applies to both business and IT managers. Where managers were unable to communicate and form relationships with their preferred targets they then targeted people at a **lower** level within the hierarchy than themselves.

An ability to communicate was not restricted to a person's personality. A number of participants indicated that the history of IS/business relationships could also affect communication. For example, within the first minute of the first focus group commencing T13 made the following comment:

I don't think there is any right reason for people not to talk to other people really, but in a business sense that is a huge limitation not working with that person because such and such happens. That's politics starting up and it just gets worse from there.

... things are already in place with history. Things that happen in the past and it takes a very professional view to get past mistakes and bad experiences and still work together in the future (paras. 13, 15).

Both T15 and T16 also indicated that a major IT failure that occurred within their organisation 10 years ago still affects the relationship between IT and the business. In the words of T16:

... there is an element of history. As I said earlier, in the 90's this organisation nearly went belly up due to the failure of a big [IT] project. There was a real lack of confidence in IT and basically that ability to self-manage was taken away from IT. It became a cost centre. It was stuck under the Chief Financial Officer for the organisation to be managed by accountants (para. 50. Sections of this quote have been paraphrased to maintain confidentiality).

T15 and T16 indicated that since this failure the IT group has been virtually reduced to supplying a low cost reliable service to the business. Projects are identified by the business and presented to the IT group with an associated budget for delivery. The IT unit often has little or no input in this planning process (paras. 38-44). The IT group would prefer a situation where:

... when you do come to understand the projects being delivered the following year, you are closer to knowing exactly what they are and what skill sets you need, when you need them as opposed to 'Here you go, deliver this!' And you've got no idea what your IT costs are but

there has been a budget locked in and you've got to deliver against this (T15, para. 45).

A particularly poor outcome of the current situation was described by T15:

...the first Business Strategy Review I experienced a guy came up and said 'OK. \$75million allocated to this program of work.' And I just looked at him and said 'Well, what's the IT component of that?' And he just gave me the funniest look and said 'What are you talking about?' And I said 'Well, how did you come up with that amount?' and lost the IT component because there was just no allocation (para. 69).

This is occurring within a large financial organisation that totally relies on its IT to function and has an annual IT budget of some USD\$800million. When questioned further about this situation T15 said:

... you can have an order taker, a partner or strategic partner. At the moment our IT is between an order taker and partner and it has a view to being a strategic partner (para. 61).

These quotes, together with other sections of this interview, indicates that the IT group is generally doing what it is told. Genuine communication with the rest of the business is limited by this historical event and the subsequent development of certain mental models within the organisation. This, in turn, is affecting the ability of managers to form relationships and collaborate.¹⁶

These two participants, who were interviewed together, then said that their organisation had appointed a separate CIO for each line of business. One result, according to T16 was that:

...the CIOs have been there for about 14 months now. To me they are starting to move into the relationship side, rather than just the technology problems. My personal opinion is that some of the CIOs are too technically focused and they're not business savvy. And I think

¹⁶ Informal conversations with T15, T16 and other managers within this organisation clearly show that senior management is very aware of this situation and is attempting to address it.

7.2.1.5 Organisation Structure

Organisation structure is often associated with command and control and with the implementation of corporate strategy. With the latter concern priority is paid to the structure of units involved in the core competence of the organisation. Much less emphasis has been placed on the structure of support units such as IT. Most of the research into the structure of the IT function has restricted itself to two aspects: control versus coordination; and IT architecture, specifically hardware and software infrastructure (Gordon & Gordon 2000, p. 8).

However the participants of this study were more concerned with its ability to affect communications between managers and its affect on strategy implementation.

An example of the effect of structure, and in particular the isolation of the IT group from the rest of the business, was demonstrated during the interview with M3 part of which is reproduced below. (F represents Facilitator in the following extract.)

F. ... where is the IT group physically located in this organisation?

M3. They're physically located in this building on one of the floors. They share it with what you'd call administration. They handle premises.

F. But they're not spread through the business?

M3. They're not spread through the business at all. There is no business liaisons.

F. So in effect they are physically isolated from the rest of the business?

M3. Correct.

F. ... do you think that physical location of IT people has an affect on their ability to develop relationships?

M3. Absolutely. HR (human resources) here is actually dispersed. We have HR people sitting with every business unit.

F. But they don't do that with IT?

M3. They don't do that with IT. ...they're very much in their little shell and in fact they are not even being told what's happening with our ERP implementation which has me totally staggered. ... The IT team, again, I think has made that conscious choice to retreat because they feel under attack at some point but it means that they've got this shell shocked mentality. They just cannot engage the business from that floor. They have to get out. I would like to see them engaged across the business. Now in the ERP project we are doing, they actually took a whole bunch of people be it a marketer or a sales person or whoever from the business and put them in as business analysts into the ERP project. And they do a massive amount of integration and communications back through all levels of the business and involving people in those processes from very early on. So there is a much stronger relationship and ownership with that project. These are two completely separate IT things going on and the relationships with the rest of the business of these two IT groups are completely different (paras. 149-163).¹⁷

This line of questioning arose as a result of analysis of earlier interviews where other managers, both business and IT, indicated that IT groups are often physically isolated from their customers (often the rest of the business) and that this adversely impacts their ability to form relationships and collaborate. They are not given the opportunity to initiate the regular positive communication that is essential to the formation of trust and, eventually, relationships. T1 gave another example when asked whether the visibility of IT staff affects alignment. His response was:

Very much so. In a number of my positions this is one of the things I've worked very hard to change. To increase visibility. I've taken over a number of teams where they were very much perceived as back of the shed people, propeller heads, put away in a corner. And the

¹⁷ M3's organisation is a large multi-national manufacturer of electrical consumer goods. He explained that the IT group was not involved in the ERP project. Management had engaged business managers and consultants. The internal IT group is effectively reduced to providing a reliable, low cost computer network.

reality is that by getting out and getting them to engage with business you get more of the understanding of the informal business strategies, and you've got a lot more chance of building an IT strategy that's fit with that. The only way is to get out there and talk to them (para. 91).

When asked how he attempted to overcome the lack of visibility of IT staff, T1 responded:

A number of ways. We changed recruiting policy to select people who were good communicators. So deliberately sought IT professionals who had people skills and actively selected on that basis. We physically moved people. So, we did a lot of our work on a, very much on a project basis where there were collaborative projects with a mixture of IT and business people assigned to a project team. So they had to work right next to each other, with joint accountability for delivery of the project. Its just breaking down the barriers workshops, seminars, coaching sessions. Even really simple things like going past... if you had an area where you know you had a few problems the previous week with applications, I would actually walk past and ask them. For, just, the IT director's interested his staff is delivering to you. Tell me, and if it's not working, I'll get it fixed. Its just opening the door. We care about the result (para. 93).

T1 was then asked how he would locate his IT staff if he was given an option. He said that:

I would definitely (have)... all the staff on any given project team, within 10 metres of each other. So that, whether they be developers or testing engineers, or project managers, or business analysts, or operators, or people who were going to use the system. Wherever their responsibility, whether they came from IT, whether they came from finance, whether they came from production have them near each other, rubbing shoulders on hourly basis (para. 101).

When asked why he would structure his IT team like this, and what the result on alignment was, T1 responded:

The single biggest cause of heartache in IT projects, that I've experienced, comes from miscommunication between IT and business. And the single biggest factor in that is that they don't speak the same language. They don't understand each other, and the best way... its hard... I'm not sure how to go about getting business people to understand IT. I've tried that and my experience has been once they do, they want to stay in IT. They don't want to go back. Got some very good business analysts that way, very good business analysts. Done nothing to help the business in terms of understanding IT. But, that's another story. But, so the only other thing you can do is to train up the IT people to understand the business, which is good. The effect was with those business units that participated willingly, not all business units were equally open to doing this, was that the distinction between the business and IT strategy tended to melt away. So, it was like this shared strategy that, obviously a business strategy, but included things we needed to have included as well. So, there would be staffing policies for IT staff and production staff. It was actually a production unit we were most successful with. The distinction tended to drop away. You still had IT specific things but they tended to be quite operational details. So 'here's the goal we're all shooting for - we want our systems into the on-line space to provide a web enabled front-end to make it easy to do business with our customers... what does that all mean?' Well, we're going to do those projects over a period of time. But the actual strategies... the distinction between the actual strategies tended to melt away (paras. 103, 105).

This series of quotes indicates a strong influence between organisation structure and relationships. As previously argued, once these relationships develop there is an improvement in Shared system of meaning and Shared domain knowledge. Once the latter is developed there is an improvement in strategic alignment (Nelson & Coopriider 1996; Reich & Benbasat 2000). It also indicates that the development of communication will, eventually, lead to a high level of integration of IT and business plans. This contradicts earlier research that argued that a high level of plan integration

will foster communication between senior business and IT management (Teo & King 1996, p. 318). Although the evidence provided here is not conclusive I would argue that the earlier research assumed one-way linear causality and did not test for causality in the opposite direction. The argument being made here is supported by the work of Earl (1993) who found that an organisational approach that encouraged mutual communication and learning was the most effective when developing an SISP.

The above quotes also indicate why the informal structure is so important (Chan 2002). Where it is not possible to physically co-locate IT and business personnel an informal structure must be substituted. This is possible at senior management level as discovered by Chan (2002), but this research indicates that it is also possible at lower levels of an organisation. But, an appropriate environment must be provided as encouragement. As will be seen, it is here that the non-linear nature of influence between variables has a major affect. Creating an appropriate environment can be extremely difficult.

As previously mentioned organisational structure also has an impact on strategy implementation, particularly business strategies. This, then, has two effects.

Firstly, there appears to be a tendency for CEOs to create separate business units then place these units into competition with each other presumably to achieve both efficiencies and high achievement. An example of this was provided by T13:

We've got branches, and we've got products we are trying to put out. New South Wales branch get in trouble for trying to work with Victoria, or South Australia or Queensland branch to provide a focussed information kit... to potential clients. If they're crossing those borders they have to really justify it. So there's bunker mentality – New South Wales branch against Victoria branch. I've come across this a lot in the last few months, and I'm just thinking it makes no sense. So, as far as IT and business alignment goes, one of the main inhibitors may well be divisions within the business as well, not just IT.

Although there seems to be a relationship between Organisation structure and Motivation and measurement schemes the data collected in this research does not

indicate that one influences the other. It is therefore not shown in our model. But organisational structure does appear to influence strategy ambiguity as indicated by the quote from T13, above. This line of influence is therefore shown in Figure 7.5.

The second situation occurs where there are separate, autonomous business units being serviced by a single IT group. This appears to be quite common with at least three of the organisations represented in this small sample having such a situation. Because the business units are autonomous (and are often the result of corporate acquisitions) they may modify the corporate strategy or tend to develop their own strategies either separate from, or in addition to, the corporate strategy. A result of this is that the IT group can find itself supporting a number of strategic business plans and therefore developing a number of SISPs to cope with this situation. This is obviously not ideal! A number of earlier researchers (e.g. Chan 2002) restricted their investigations to single business units probably to minimise the effect of such a situation on their results. T7 indicated that where such a situation exists the senior IT manager (in her situation the IT manager for the Asia/Pacific region who was responsible for 13 different national business units) tended to concentrate on the business unit strategies rather than corporate strategies. This is because both he and the business unit managers were being measured on the performance of the individual business units, not the overall corporate performance. In the words of T7 the regional CIO:

Consciously works to establish alignment to business strategy of the region – definitely. Consciously works to establish alignment to the global strategic business plan – not as definitely (para. 86).

T7 indicated that her organisation actually spends considerable effort in developing meaningful business and IT plans. She reported that in most instances most managers attempted to follow the strategies contained in those plans. The above was presented to illustrate that problems can occur even when an organisation has high intentions.

T1 described a much more difficult situation. He had been the CIO of a federated organisation that consisted of five autonomous business units that had been purchased by corporate headquarters. T1's IT unit provided services to each business unit. But, because they were autonomous and had their own cultures they tended not to

collaborate. He had a situation where he was attempting to implement different IS plans for each unit whilst attempting to maintain some sort of consistency of architectures.

The above discussion indicates that Organisation structure influences the Ability to communicate and also has an influence on the Implementation of strategies and plans. These lines of influence are now added to the developing model and presented in Figure 5, below. The importance of co-location of IT and business staff on shared domain knowledge, shared system of meaning, the development of relationships and the history of relationships between the IT group and business has been demonstrated. However, IT groups still tend to be located away from the rest of the business even though this is known to be detrimental to alignment (Groenfeldt 1997, p. 39).

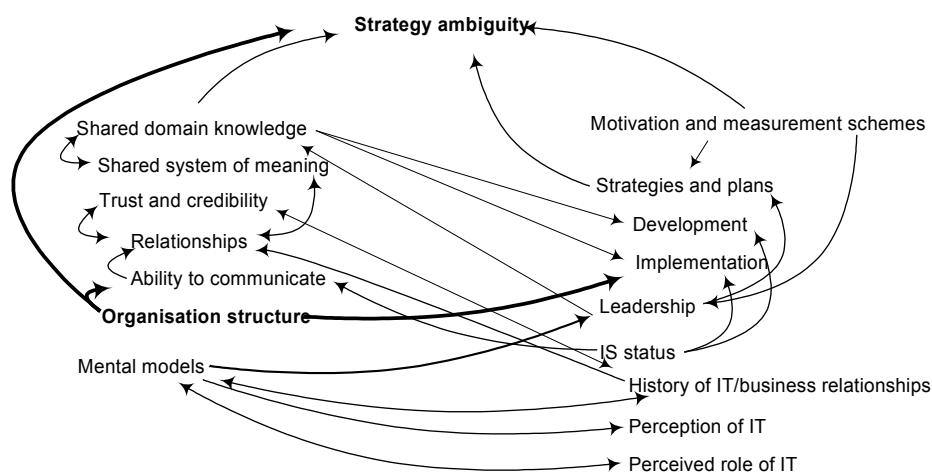


Figure 7.5. Organisation structure tends to influence both the Ability to communicate and Implementation of strategies and plans.

It could be that IT staff are isolated from their customers due to the mental models held by senior management and business staff in general. This is now investigated.

7.2.1.6 Mental Models

The discussion so far could be seen as indicating that all the variables (shared domain knowledge, shared system of meaning, trust & credibility, relationships, ability to communicate, organisational structure, and education & training) could help to determine the mental models being employed by managers within an organisation. These, then, can have a significant influence on how a manager will react when dealing either with a problem or another person or group (Senge 1990; Vennix 1996).

These authors also report that, once established, changing the mental models in use can be extremely difficult.

According to Vennix (1996, p. 21):

... a mental model contains A's view of the reality. The term mental model should be interpreted broadly to include attitudes as well. It produces and contains descriptions, interpretations and explanations of situations which A perceives in the environment. This mental model is constructed and maintained by selecting and interpreting information from the environment. As stated, this selection process is itself guided by the existing mental model and subject to the 'law' of looking for confirming evidence... In addition, internally the mental model is subject to selective memory and distortion. In other words, there is ample opportunity for different human beings to construct and maintain different mental models of the 'same' external situation.

Doyle and Ford (1997, p. 17) developed another, similar, definition of mental model:

A mental model of a dynamic system is a relatively enduring and accessible but limited internal conceptual representation of an external system whose structure maintains the perceived structure of that system.

Both of these definitions indicate that a mental model is personal and is subject to a person's beliefs, experiences and attitudes. It represents a personal understanding of what, why and how, things are. That is, mental models severely affect our cognition.

My own mental model is that linear causal relationships rarely occur within a social system. This is why I chose to use the interactive family (Glaser 1978, p. 76) when coding transcripts of my data. Because I am sensitive to recursive relationships I tend to find them, so confirming my mental model. This selective perception means that mental models are often extremely difficult and slow to change. An extremely good example of the effect of mental models on the decisions of senior management is given in Tripsas & Gavetti (2000) who explored their effect on the decisions of senior management within the Polaroid company when it was attempting to develop digital

imaging capabilities. An extremely persistent model within Polaroid was that any output from such a device must be film based as that complied with their existing business model. This was in spite of evidence to the contrary. It could be argued that similar limitations apply to senior management when considering the use and management of IT within an organisation.

The above could explain the Status of IT, and its sub-categories (see Figure 7.5), held within an organisation. Once a trend has been established the myths and stories told by an organisation regarding these matters make it extremely difficult to alter perceptions or mental models (Avison, Cuthbertson & Powell 1999). These lines of influence were discussed in the previous chapter and are already included in the developing model (see Figure 7.5). The participants of this research gave a number of examples of the mental models held by various managers and organisations. The quote from T1 provided earlier in this chapter when he discussed different interpretations of the term ‘process’ is an example of the mental model held by book editors – they did not consider their work as a process as they considered editing as creative rather than administrative. M3 was asked about the situation at his current organisation where, in his words, the IT group was considered dysfunctional. After describing the situation M3 was asked whether the IT group was considered as a cost centre not an area of advantage. M3’s reply was:

Correct. As I said, I think some of their [the IT group’s] problems are driven by senior management’s view, but from what I can see IT is doing nothing to help that situation (para. 90).

When asked earlier whether he thought this IT group could change in the event of a change in strategy, M3 had replied:

No. I think they’ve built themselves in such a way that they’re almost impervious to a strategy change. They tend to see their role as purely mechanistic, I guess a technical delivery rather than a business value type thing which is more where the strategies tend to happen. I think that is where they’re falling down and it’s going to take some effort to change (para. 86).

This is an example of another characteristic of mental models identified by Vennix (1996, pp. 21, 23). A person's environment includes the actions of other people. A person will interpret these actions and react accordingly. Using the two quotes above, and previous quotes, from M3 it can be interpreted that senior management considers IT as a cost centre and the IT group reacts accordingly, concentrating on reducing costs and purely technical issues. Because of this, senior management then sees the IT group as not engaging with the business and isolates them further. Earlier quotes from M3 indicate that communication between the IT group and business is particularly poor. All of the above tends to reinforce management's conclusion that IT should be considered a cost centre and that it cannot contribute to the competitive advantage of the company. Changing these mental models could be extremely difficult. M3 indicated that IT management was making taking tentative steps to improve relationships, but the existing mental models of business unit managers was making this difficult. M3 indicated that:

the leaders of those organisations have been here for a much longer period of time. And they would still be carrying the other mindset and the relationship between the operating business and service centres, be it IT or logistics, is far more adversarial (para. 96).

Both T15 and T16 provided a similar scenario within their organisation, a large financial institution. Originally IT had been considered as capable of providing a competitive advantage to the organisation. A large IT project failure in the early 1990's changed this perception. According to T16:

Confidence in IT was lost and so a lot of autonomy was removed from the IT organisation and so the accounts (function) basically came in to drive IT and took a lot of the business management out of it. A lot of that appropriate risk taking out of it, out of the IT organisation. So that's why at the moment it's like 'Here's a project. Fill that order and deliver something' (para. 18).

T15 then compared this situation to his former employment at another financial institution:

At [my former employer] the business people look at IT as a partner, someone who can help them to cut their costs and give them what they need. (Here) I don't see that as well. It's still business versus IT. At [my previous employer] it's what I call a technology family – they tend to come together. And they understand the value IT can deliver to the business. They still have their arguments... (para. 30).

In a situation that is very similar to that described by M3, T15 and T16 also reported that IT/business relationships within their organisation are poor with a low level of communication between the groups. The quote above from T16, and those from M3, indicate that in these organisations the IT group tends to do what it is told. It is not in a position to negotiate with its customers (the rest of the business). T8 reported exactly the same situation in her organisation. As the senior IT manager she reports to the chief financial officer (as is the case with the CIOs of the organisations of M3, T15 & T16) and has no input to business plans or the projects to be undertaken by her group. An initial mental model has been cemented in place and then influences the Ability to communicate and Relationships. This all becomes part of the History of IS/business relationships and partly determines IS status. These, in turn, reinforce the prevailing mental models in use by both IT and business personnel.

Changing these mental models can be extremely difficult. T15 and T16 have been given the task of doing exactly that within their own organisation. T15 gave an example of attempting to change the mental models of a small IT group:

... we had a number of initiatives which were around the main theme of being to run IT as a business. So to run IT as a business you need to understand who your customers are, what your products and services are, and look at things from a product and service perspective so that you understand the dynamics of the small business. So, if you spoke to a team leader in IT and said 'Well, how many people have you got working for you?' and they say 'About 20 people, about 20 developers' and you say 'Well, you've got a \$2million small business. Who are your customers?' They just give you this queer look as if to say 'What are you talking about?' So when you actually go

through it with them and say 'Each business unit is your customer. What are your product and services?' Again, they don't understand what you are saying. But when you get down to it and say 'Well, your service is coding, and your product is the lending system' it starts to make sense. So then you can say 'OK. To keep your customers happen as a small business unit, what do you need to do? Cut your costs, manage your efficiencies and all that.' Which is a totally different mind-set to what they have today which is come to work 9 to 5. Someone gives you a form which says 'Go and code this.' I do it, and hand it off. No! Think a different way (para. 33).

When transcribing this section of the interview I made a note to myself that identified two different attitudes: 'I do what I'm told' versus 'I have to keep my customers happy.' Prior to the interview with T15 and T16 I had identified two different responses that seemed to be operating within IT groups. The first, for which I had quite a bit of data, was one of collaboration with the business. The second, for which I had little primary data only references from earlier participants, was a response of concentrating on the technology and withdrawing from the business. I recruited T15 and T16 to this research after attending a seminar they gave at my institution. They described their own organisation exactly as my earlier participants had described an IT group that had retreated to concentrating on the technology. I already knew that an attitude of 'keep our customers happy' was prevalent in those IT groups that actively pursued collaboration with their business units. The quote above indicated a different attitude (I do what I'm told) in use by those IT groups that were regarded as a cost centre by senior management and therefore retreated to the technology. This was corroborated during interviews with M3 and T8.

The quote above does not address one of the major problems of attempting to change a person's, or group's, mental model. I mentioned earlier that people react to the actions of others. What would happen if the development group, above, attempted to operate like a business but their customers were still operating with the old mental model? It is highly likely that its overtures would be rejected and the development group would then retreat to its former position, maintaining and probably strengthening the existing mental model.

In this type of situation both parties must be prepared to change. T4 described such a situation in his organisation:

... we had a managing partner who started the drive, that process, who started to want things done. And we did one or two little steps, and the next thing you know, IT was dragged into 'All right, this is what we want to happen. Do this' and then discussion happened (para. 39).

A number of things are evident from this quote. Firstly, the mental models of those participating in the exchange were being modified. Because of this it appears that communication was also enhanced. From other comments made by T4 it is evident that there is now a good relationship between the IT group and the rest of the business (a medium sized law firm).

From this discussion it can be interpreted that mental models affect, and are affected by, IS status and its sub-groups. It also affects the Ability to communicate which in turn affects Relationships, Trust and credibility, Shared system of meaning and Shared domain knowledge. These lines of influence are added to the developing model and shown in Figure 7.6, below.

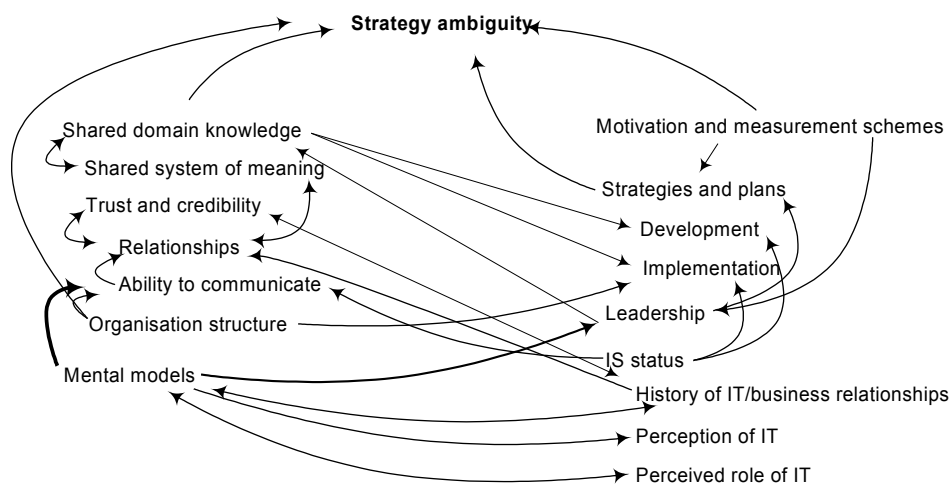


Figure 7.6. Mental models influence the Ability to communicate. This in turn influences Relationships, Trust and credibility, Shared system of meaning and Shared domain knowledge. Mental models also affect, and are affected by IS status and its sub-categories.

7.3 Summary

Figure 7.6, above, includes the major variables identified in this research that affect strategic alignment together with the lines of influence between these variables. It does not infer that these are causal relationships but merely that participants indicated that one variable tends to influence another. The model in Figure 7.6 has also been simplified to some extent. For example, History of IT/business relationships, Perception of IT and Perceived role of IT are all sub-categories of IS Status. The model indicates that IS status influences the development of strategies and plans. Therefore it should be understood that the three sub-categories of IS status also influence the development of strategies and plans in some way.

The variables in Figure 7.6 have been separated into two major groups. Those on the left hand side of the model are conceptually identified with an ability to comprehend a complex problem situation. That is, they can either limit, or enable, a person's ability to understand a given situation. For the sake of clarity and simplicity I have labelled these variables as being a part of a major category I have called the Locus of Comprehension. Similarly, those variables on the right hand side of Figure 7.6 can be interpreted as constraining a manager's ability to take action. That is, they control a manager's action. They have therefore been included within a major category I have labelled the Locus of Control. This is shown in Figure 7.7.

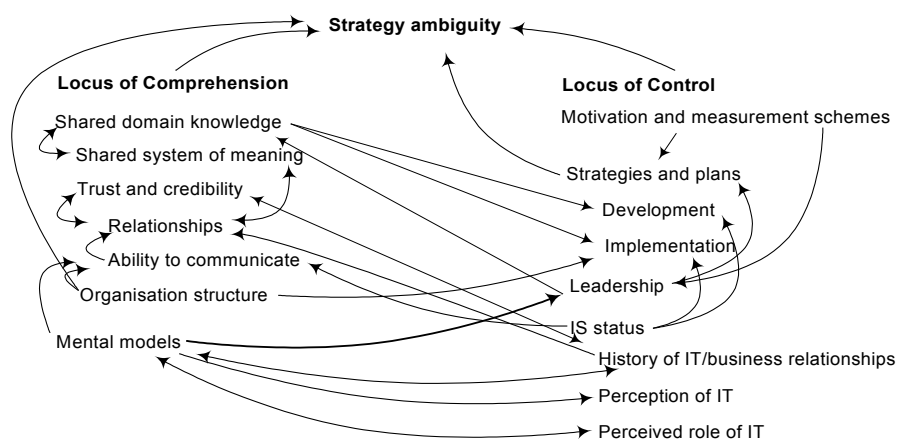


Figure 7.7. The identification of the major categories Locus of Comprehension and Locus of Control.

The differentiation of the variables into these two loci is artificial and is a part of the conceptualisation required to develop a theory grounded in the data obtained during

the research (Glaser & Strauss 1999). What must not be lost in this conceptualisation is the web of lines of influence between all the variables contained within these two major categories. This model indicates that these lines of influence are anything but linear. Each variable affects, and is affected by, multiple other variables. This explains why it is so difficult to attain strategic alignment. A change in one variable, for example an attempt to improve communications between IT and business managers, is impacted by other variables which, in most instances, attempt to return the target variable to its original state. This is an example of a balancing, or negative, feedback loop and is well known in system dynamics studies of social systems (Sterman 2000, Chapter 3).

In raising the model to an even higher conceptual level the variables shown within the two loci could be excluded and replaced with a double ended arrow between the loci to represent the interactions between the variables. This is shown in Figure 7.8.

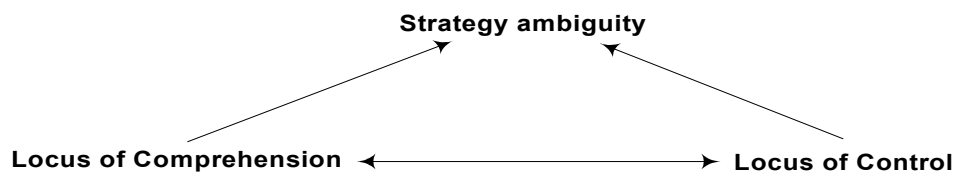


Figure 7.8. The model shown in Figure 7.7 brought to a higher conceptual level by removing variables within the two loci and replacing these with a double ended arrow.

References have been made during the discussion in this, and the previous, chapter to two different situation that can occur within a business. Firstly, the IT group can be considered a part of the business where its members actively engage in relationship building and collaboration with their business peers. The second situation often occurs where the IT group is considered solely as a cost centre. In this scenario there is little communication, relationship building and collaboration. The IT group concentrates on delivering a low cost, reliable computer network.

I have called these two responses by the IT group to the situation it finds itself in as a *Collaborative Coping Response* and a *Technological Coping Response*. These two responses will be described in the next chapter and the model of the theory being developed here will be completed. I will then briefly review some of the alignment literature as it applies to my theory.

8 The Two Coping Responses

8.1 Abstract

The two previous chapters described the variables within the locus of comprehension and locus of control and their mutual influences. This chapter will briefly describe the influence of the variables within these loci on strategy ambiguity and then describe the actions that, to a large extent, are dictated to an IT manager when attempting to address strategy ambiguity.

8.2 The Influence of the Loci on Strategy Ambiguity

This research is primarily concerned with the actions of IT managers when attempting to achieve IS/business alignment. It was argued in the previous chapter that the interaction of variables within the locus of comprehension and locus of control could affect the reaction of IT managers to strategy ambiguity. However, participants indicated that the interaction of these variables also affects business managers, not just IT managers. This was inferred, but not made explicit, in Chapter 5 where the core problem of participants was identified.

Chapter 5 indicated that business managers are confronted with situations where they do not fully understand business strategies that are often at a high conceptual level. In attempting to understand what the strategies specifically ask of them they are subject to the interaction of many of the variables within the locus of comprehension. The *mental models* that become dominant in various business groups and functions affect managers in their *ability of communicate* and develop a *shared system of meaning* and then *shared domain knowledge*. A similar situation can arise within the hierarchy of a single unit. Both these types of situation were described in Chapter 7.

The actions of business managers are then constrained by many of the variables within the locus of control such as *motivation and measurement schemes, leadership* and *the mental models* that are prevalent within the organisation and its business units.

The combination of the effects of the variables within the locus of comprehension and locus of control result in a situation where the strategies developed at the executive level may be modified during implementation. This was described in Chapter 5.

This indicates that the variables within the theory and model being developed here are applicable to both business and IT managers when they are dealing with strategy development or implementation. Although this became evident during the course of this research it was not pursued to any extent as it was beyond the scope of the project. It was sufficient to recognise the situation and to incorporate it into the theory. The interaction of variables within the two loci does, however, help to explain why so many businesses have difficulty implementing the strategies that have been logically developed (Baker 1992; Kerr 1995; Mintzberg 1994b, 1994a). We can now incorporate these concepts into Figure 7.8 from the previous chapter (Locus of Comprehension) to further develop the theory as shown in Figure 8.1.

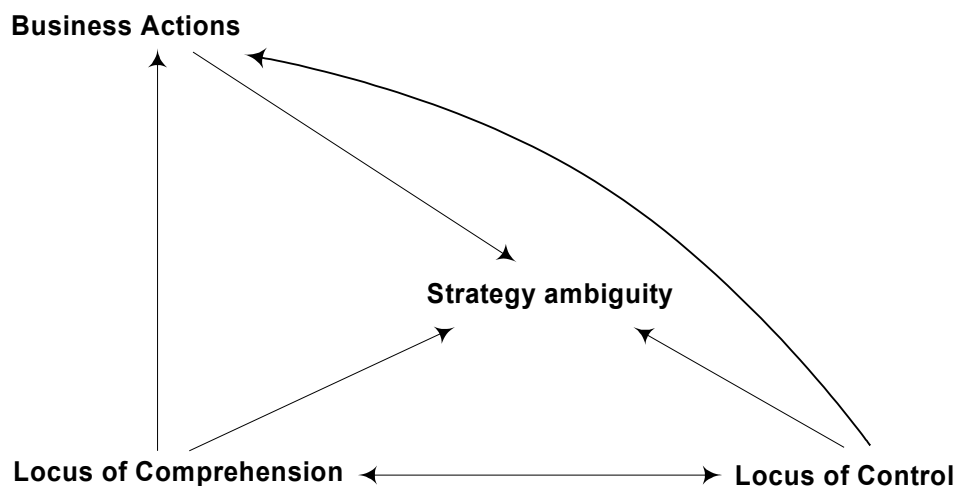


Figure 8.1. The variables within the two loci impact business managers' reactions to business strategies. These actions then add to the strategy ambiguity faced by IT managers.

This indicates that many of the variables in the loci influence *business actions* and that these then affect the *strategy ambiguity* that is the major concern of IT managers.

Participants indicated that the interaction of variables within the loci led to one of two broad courses of action.

If a situation arises where the *mental models* of senior business managers support a belief that IT can create advantage for the organisation it is likely that this will influence the *perception of IT* and the *perceived role of IT*, so improving *IS status*. This, then, can lead to a situation where the *ability to communicate* can flourish with attendant improvements, eventually, in *shared domain knowledge* and the *development and implementation of strategies* (see Figure 8.2). Earlier research would support this conclusion (Avison, Cuthbertson & Powell 1999; Nelson & Coopriider 1996; Reich & Benbasat 2000).

I have named this the Collaborative response as it is the collaboration between business and IT managers that is its essence. IT managers engage in effective communication with their business peers in an attempt to understand the strategies in use and then take appropriate action to support the decisions and goals of these peers. That is, they collaborate.

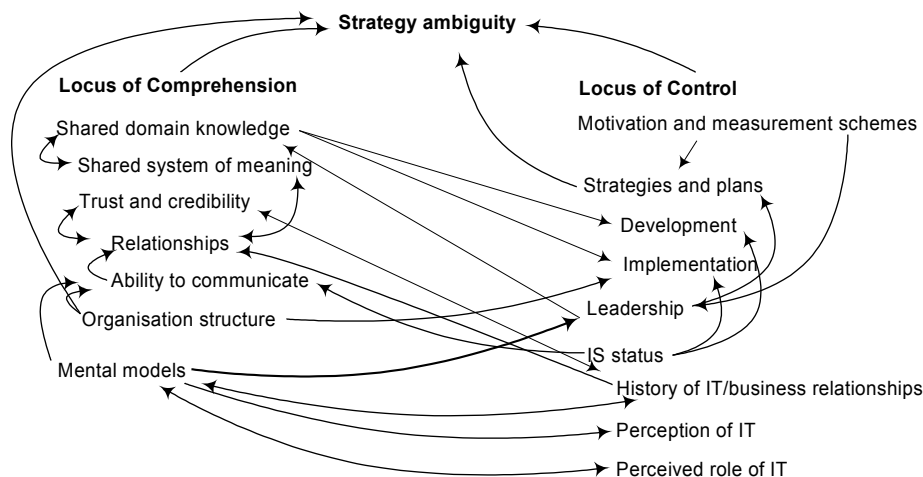


Figure 8.2. This is a reproduction of Figure 7.7 from the previous chapter. It shows the interaction of variables within the locus of comprehension and locus of control.

However, my subjects indicated a number of factors that affected their ability to collaborate. For example, if *IS status*, including its sub-categories, is low there is a decreased ability to collaborate as business managers are less willing to communicate with IT managers. *IS status* also impacts the *mental models* held by both business and IT managers and this, in turn, affects the willingness of managers to communicate

and collaborate. Where communication and collaboration are low it is unlikely that *relationships, trust and credibility, shared system of meaning and shared domain knowledge* are likely to develop (Bashein & Markus 1997; Lewicki & Bunker 1996; Nelson & Coopriider 1996). This, combined with low *IS status* then means that it is unlikely that senior IT managers will be invited into the business planning process. It also creates a situation where very few of the critical success factors for integrating business and IT plans are met (Teo & Ang 1999). Subjects described a situation where IT managers tended to retreat from the business and concentrate on the technology, providing a reliable, low cost service. I have named this the *Technological coping response*.

Note that the two scenarios just described form loops of variables as shown in Figure 8.2. Where a situation arises where collaboration is discouraged it is likely that the actions of all participants will tend to reinforce the prevailing situation due to the constraints being placed on them. The opposite is also true. The learning that occurs becomes tacit (Nonaka & Takeuchi 1995) making changes to the situation extremely difficult. Put another way, it becomes ‘the way things are around here.’ This occurs even though IT managers react individually to the variables within the loci when faced with strategy ambiguity.

The two responses to strategy ambiguity are now described.

8.3 The Collaborative Coping Response

It has always been assumed that improving communication and, presumably, collaboration is one of the major means to improving alignment (Feeny, Edwards & Simpson 1992; Nelson & Coopriider 1996; Reich & Benbasat 2000; Teo & Ang 1999). Few articles indicate that there could be constraints on IT managers attempting to improve the level of communication other than their personalities (Teague 1998) or their level of technical expertise (see, for example, the model developed from the literature by Reich & Benbasat 2000). The model shown in Figure 8.2 questions the role of technical expertise in promoting communication and collaboration. While it has a role it is not the dominant role that practitioners often ascribe to it (Bashein & Markus 1997; Campbell, Kay & Avison 2005). The model in Figure 8.2 indicates that

constraints other than personality or technical expertise may have a far greater impact on the ability of an IT manager to foster effective communications.

Assuming that effective communication is possible within a given workplace, it is then quite possible that an IT manager will eventually gain an insight into the goals, strategies and consequent actions of his, or her, business peers. The importance of collaboration and the development of networks was provided by T7 when she said:

How do you know if what you're doing is in the right direction if you don't have these relationships? You develop the networks, you develop an understanding of what the business wants, or the strategy that is required. If you didn't have the relationship you couldn't be in alignment, because what would you be in alignment with? You wouldn't know anything (para. 94).

The interactions of the variables within the two loci would indicate that in this situation there may be fewer constraints on the actions that an IT manager can take when attempting to support those of business peers. Similarly, *IS status* is also likely to be higher providing more freedom to work with business peers (Avison, Cuthbertson & Powell 1999, p. 442). However, the support of business managers' goals by an IT manager may not lead to IS/business alignment.

8.3.1 The Target and Horizon of Alignment within a Collaborative Coping Response

The vast majority of alignment research has restricted itself to investigations at senior management level and this has been criticized (Ciborra 1997). The assumption is that official business and IT strategies will, or should, be implemented at lower levels of an organisation. When this does not occur the IS literature in particular assumes that it is due to poor planning methods and that these should be improved (Lederer & Sethi 1988). Both this, and earlier, research has indicated that there are a number of factors, including the motivation and measurement schemes in place within an organisation, that may make implementation of planned strategies problematic (Baker 1992; Kerr 1995). That is, a business manager may be following either organisational strategies or some modification of them depending on his ability to understand what is required and then to take appropriate action. T7 provided an example:

At a regional level there is a business strategy that has 3 or 4 directives. They're going to achieve a certain amount of revenue, they're going to do it with particular HR processes, particular IT processes, particular finance processes at a regional level. But they're just statements. You know what they are at a regional level. Then each of those countries are able to interpret what they need to do to contribute to that strategy, and that becomes their strategy (para. 20).

T7 then went on to say:

... the mantra around here is just 'hit your number. Don't care how you do it, will within reason, but hit your number.' ... what they're kind of saying is we are giving you the freedom to execute that strategy in any manner you see fit for your local industry. So you find the strategy that hits your number. But my issue with that is that there are some strategies which are not number based. IT is one of them in this organisation, HR is another, finance is another. And what happens is that the sales and marketing functions tend to try – they need to execute strategies to hit their numbers. So what happens is 'bugger all the rest of the strategies. Bugger the support function strategy' if you like. If the strategy of IT is to have standardised infrastructure, for example, then the MD in a particular country might fight that all the way because all they can see that doing is eating into their bottom line number. ...essentially that's more or less what they're incentivized on (para. 40).

The first quote from T7, above, indicates that as an IT manager she is attempting to form networks to understand the strategies actually in use by her peers, and then collaborating with them to support those strategies. In collaborating with a business manager an IT manager could be supporting either organisational strategies or some modification of them.

The last quote from T7, above, provides a hint to another issue that was explicitly stated by T1. There can be some complications when developing strategies with

business units. T1 reported a situation that he had encountered in the past where the IT group of which he was the CIO was supporting a number of autonomous business units within a federated enterprise. The result, according to T1, was:

... you collaborated with a business unit and developed strategies for them and you collaborate with this other business unit and develop strategies to support them. And then you have this juggling act where you try to make it work for the two of them (first interview, para. 111).

When asked whether he confronted a similar situation and whether it caused problems T2, a CIO, responded:

Yes. I've got one at the moment where 2 business units are slightly different in their model. One's a warehouse product, one's a direct to store product. Both of them are looking at doing an upgrade in a particular functional area, both of them think they know what they want, and both of them want different tool sets. That's not necessarily a bad thing. If there's a different business model and different... by nature of the product sets we expect a higher return out of one than the other so one product we'll spend a bit more money and it will have a few extra bells and whistles and the other one will be a little bit cheaper. So there could well be two tools. But we're having to work through that. The issue is more around some of the politics of who and how things have been approved and also the timing. Because we can't necessarily do two parallel projects in the one functional area at the same time. Or we can, but we would have to go to the outside market to get more resources and then you start to talk about who pays for the hard cost of the external resource. The only worry is, again, it's easy to say, but I'm not going to get caught piggy in the middle. So if necessary, as I've said to some of the FDs [finance

directors] before, if they don't like the charging basis I can sit down and explain it to all five of them. If they don't like it the only way I can overcome it is to get them all in a room and we won't leave until we've decided it. Because the overall number has been ticked and approved and the overall number is fine, so if this is an arm wrestle that is non-productive about who gets what inside, then let's sit in a room. But I'm not going to agree to you that we're going to lower yours because then that just pisses someone else off and I've got to start again (para. 60).

Although rarely stated outright it became evident during analysis that virtually all IT managers who attempted to form networks with business managers did so with managers at their own hierarchical level within the organisation. That is, a CIO will form networks with other executive level managers whilst lower level IT managers form relationships with business line managers. This affects the target of alignment as well as the alignment horizon.

Executive level managers, including the CIO, are normally concerned with developing and implementing organisational goals and strategies¹⁸. In supporting the actions of other executive level managers, CIOs are likely to be supporting organisational goals and strategies. As organisational goals and strategies are long term, so alignment is likely to be long term. This interpretation supports earlier findings. Chan (2002) found that the informal networks between CIOs and other executive level managers are possibly the most important aspect of strategic alignment. Reich & Benbasat (2000) found that only shared domain knowledge (of the variables they considered) between executive level managers influenced long term alignment. The model in Figure 8.2 indicates that shared domain knowledge will normally only develop when the conditions that allow a collaborative coping response are met.

¹⁸ Both T1 and M3 provided instances where the actions of past CEOs did not appear to support, in any way, the official goals and strategies of the organisation. These CEOs were primarily concerned with maximising their own bonuses by manipulating short term business performance. Both T1 and M3 indicated these were relatively isolated instances and they are therefore not considered here. The actions of these CEOs did, however, create strategy ambiguity for both T1 and M3.

It is interesting to note that Chan (2002) specifically restricted her research to consider strategic alignment only at a business unit level. She was then able to ignore the problem of aligning business unit and corporate strategies identified by both T1 and T7 above.

The argument developed earlier, and supported by the quotes from T7, indicates that lower level managers adopting a collaborative coping response will tend to support the goals and strategies of their business peers. These are often modifications of organisational strategies. Chapter 5 argued that the strategies often implemented by business managers have certain characteristics, one of them being that they are short term. Managers are attempting to maximise their own, or their unit's, performance. This is normally measured on a yearly, or less frequent, basis. The quotes from T7, above, indicate that lower level IT managers are often placed in a situation where they are required to support these short term goals and strategies of their business peers.

This, then, identifies a characteristic of a collaborative coping response:

The target and horizon of alignment may be dependent on the goals and strategies of a business manager, or his or her unit.

This characteristic has not generally been recognised in the alignment literature as it has focused primarily on actions at the CIO and CEO level and rarely at the implementation level (Chan & Huff 1992, p. 192). This characteristic indicates that researchers and practitioners need to consider both strategy development and implementation. An example of not doing so was provided by Nordstrom & Soderstrom (2003) who conducted a case study within a large Swedish forest industry corporation. Senior management wished to change the strategy of this corporation partly by using a corporate wide implementation of a SAP R/3 system as the major enabler of the new strategy. However, a goal of business users was to retain their current working practices and processes. This is an example of one of the characteristics of implemented strategies identified in Chapter 5 – implemented strategies generally do not require a change in the work habits of business managers or a change in their knowledge. The IT developers, in supporting their business peers, modified the SAP system so that it replicated current practices rather than enabling the corporate strategy developed by senior executives. That is, the short term goal of

line managers was supported at the expense of the corporate strategy. The target of alignment at the two levels of management was different. The current study indicates this may not be an uncommon phenomenon. Additional research is required to provide further evidence to further support the interpretation of data provided here.

There are other characteristics of a collaborative coping response.

8.3.2 Level of Formality within a Collaborative Coping Response

Most of the participants of this research indicated that they placed less reliance on formal lines of communication and formal plans than they did on informal networks and the development of relationships. The first quote from T7, above, is an indication of this from a lower level manager's perspective. Another was supplied by T6 when she said:

I'm quite an informal person. I work a lot with informal networks, and I put quite a lot of resources into that and ... I mean I do work quite a lot on documents that outline charters, and direction, but from the work I did on the IT strategic plan a couple of years ago, it was more the relationship building which aligned IT with business areas, and more the communication than the plan itself. It was the act of working with the people which aligned it. I mean the plan, it really was irrelevant what it said. If the fact it brought us together and got us talking, and meaning that we made eye contact in the lift, rather than looking at the numbers or whatever. That was what helped the most, I think (para. 150).

This informality was not restricted to lower level managers. When asked to identify three major enablers and inhibitors to alignment T6 responded:

I mean the main thing I think it comes down to is the legitimacy we have within the organisation. And that's largely based on the personal relationships between the executives and our management. So that when that breaks down, we've got real problems. And it's broken down before a few years ago, but it's quite good at the moment. And I

see that as the main groundwork for aligning. If that's not there then it's really difficult to build on anything (para. 171).

In his second interview T1, a CIO, provided another example of the informality normally adopted as part of a collaborative coping response:

...it still comes back to having information about what's really going on, and having information in a timely enough fashion to be able to make reasonably intelligent decisions to alter the course of events. And that comes from not just knowing what's going on in the IT department but knowing what's going on in the broader business and even outside the business. And the real information doesn't come through formal channels. It never does!(para. 32).

Later in the interview the following exchange took place between myself ('F' in the transcript) and T1:

F. One of the arguments that I've seen is that if you have the more planned approach, the legislative approach as you call it, you are likely to achieve long term alignment, whereas if you have the more fluid approach you are more likely to achieve short term alignment. Do you think that is a fair argument?

T1. That might be the case, but I guess I would have to be asking the question 'alignment to what?' So, if you're saying alignment to the law so if you used the planning approach and you lay down the law over time more people will follow the law than not, then its probably the case. But the question then becomes 'how does the law get changed?' And who's informing the process on where the law needs to be changed? And that's the flaw. There's alignment between actions and the law, but you've also got to take into account the other piece which is alignment between the law and reality. And I think if you broaden your alignment to cover both ends of that, the more fluid approach actually has better long term alignment. So, yeah, you can get people following the law but the law is a dumb-arse thing that you're doing, so why are we doing it? In the hierarchical approach

that sometimes is a very hard message to get back up to the people setting the laws (paras. 68-69).

Earlier in the same interview T1 gave graphical description of his own view of strategy development and the relationships between executive management and the people expected to implement formal strategies.

If we lay down the law and everyone follows the law, that's a good thing. And it's a very autocratic approach to the world and a very arrogant approach to the world. 'I, from my ivory tower, with my telescope can pick out on the horizon exactly where we are meant to be, and what I'm going to shout down to you is compass bearings and distances. And if you follow the compass bearings and the distances you will wind up where I said you needed to be.' Not even the army thinks that any more! (para. 61)

The interesting thing is, from my understanding of the modern command structures in the armed forces - and you would expect them to be the home of the hierarchy and "you will follow the orders" - they don't even operate like that anymore because they know that when they send somebody over to that location which they thought was a good place to go, when they get there they are going to find this huge hole in the ground. And they are going to have to make a decision about how to get around that hole in the ground. And from your telescope you can't see the hole in the ground. You align them to have a better idea of what they're after and figuring it out on the spot (para. 65).

These excerpts provide an insight into the belief system of T1. He obviously believes that there should be planned strategies but that they should be open to discussion and negotiation depending on circumstances. The earlier quote from T1 indicated that he believes that the only way to hold discussions and negotiations is via the development of strong relationships between various managers.

These quotes also give a clue to another insight I gained from talking to participants. It would appear that, given time, many IT personnel will gravitate to an organisation

where the coping response resonates with their own preferences. Although it was not explicitly stated in the interviews I gained a very strong impression from body language and voice tones that some participants who had particular beliefs found it difficult to work within a coping response that did not support those beliefs. For example, T1 has a preference for information gathering via informal networks. He uses plans as a guide, and does not assume them to be inviolate¹⁹. During the course of this study he obtained a position within an organisation where a technological coping response was dominant. He was extremely uncomfortable in this situation and resigned some months later. T8 also indicated dissatisfaction working within a technological coping response. When questioned about this she indicated that the only reason for remaining with her employer was that she was a shareholder of the company. Contrasting this, most of my participants indicated that they know of people who are quite happy working within a technological coping response. T15 and T16 indicated that one of their tasks is encouraging senior IT managers to adopt a more informal working partnership with business peers. Some of these managers are resisting this encouragement.

This discussion identifies another characteristic of a collaborative coping response:

The level of formality is (relatively) low.

The formality relates to plan development, plan implementation as well as the formality of communication between business units and the IT group.

8.3.3 Emphasis of IT Personnel

During data analysis it became apparent that the emphasis of those IT managers who could be identified as adopting a collaborative coping response to strategy ambiguity was providing value to the business. They were able to achieve this by developing relationships with their business peers and understanding business needs. An example of this type of approach was supplied by T2 when he said:

You've got to understand the business but the business has got to respect you. And I've found that because a lot of people focus on the

¹⁹ This was a common assumption among all participants who preferred working within a collaborative coping response environment. On the contrary, they assumed plans **would** be modified during implementation.

technology side of it they haven't looked at the management and behavioural side of it. And they haven't positioned IT to be successful or to win. And there's a lot of things we're doing at the moment... I've got a project manager who's so proud because tomorrow one of our [internal] customers is buying us donuts for morning tea because of a project we put in last week, and this is unheard of. But this guy has done a fantastic job over the last three months. With a little bit of prompting he's targeted who his 2 or 3 decision makers were and he's gone to them and said 'this is your decision. You've got to make it. If you want us to do that, you've got to make this decision. And if you make that decision you've got to stand by it.' And he's worked with them very well and I think got their respect and got them to understand that what we're doing for them has value and what they have to do for us has value, and therefore they can appreciate it. And I don't think that in this organisation and many others that that has happened in the past (para. 52)²⁰.

T15 had been employed as an IT manager in an Australian finance institution (Fin1) which appears to employ a collaborative coping response²¹. At the time of interview he was employed as a senior IT manager in a competing Australian finance organisation (Fin2). Both he and T16 were selected as participants of this research as Fin2 had been identified as an organisation where a technological coping response was predominant. T15 was asked to compare Fin1 and Fin2. He responded as follows:

To me if you look at a work and maturity of process and relationships, I think Fin1 is probably 5 years ahead of Fin2. I've been at Fin2 for 3 years and its only now that Fin2 is really starting to understand that they need a deeper, broader more strategic [alliance] with their

²⁰ Note that T2, a CIO, is encouraging the development of a collaborative coping response in his subordinates. This is one of the ways in which a coping response can become dominant within an IT group. However, this would probably not be possible if the business managers were unreceptive to this advance.

²¹ This organisation was not investigated. The coping response was tentatively identified from the descriptions supplied by T15.

business partners, and start to think of them as customers rather than the enemy. Fin1 probably in the late 90's looked at that IT/business relationship a lot stronger. I was an IT manager myself. IT looked at the business as a customer. It looked at itself as not being a monopoly. It had to compete with the externals. And it needed to establish its operational units to look at things that were important to a customer which is now responsiveness, service quality, reliability and at the end, value for money. And, if they couldn't prove it, they were not in the game. So they had a lot of scorecards and metrics around understanding a business person's expectations and how IT is delivering to those expectations. In Fin2 we have recently started a balanced scorecard, but it's IT centric. It doesn't go to the next level which is understanding the business customer relationship. But in saying that we now have the business unit CIOs deployed. I think the last 12 months they've been through the hard yards which is understanding the infrastructure and the technology that's there that they need to fix and I've heard some things around where they are saying they need to focus on the relationship side of things. So, as I say, Fin2 is a little behind, but also Fin2 is huge in comparison to Fin1. But I think the thinking in Fin2 is starting to head in the right way, and it's just a few years behind (para. 20).

These comments are typical of those participants who worked in an environment where a collaborative coping response was dominant. This was evident regardless of the subject's position within the organisation. We can conclude that within a collaborative coping response that:

IT managers place emphasis on adding business value.

8.3.4 Attitude of IT Managers Adopting a Collaborative Coping Response

The previous discussion and quotations indicate that, on the whole, the attitude of managers adopting a collaborative coping response is that of either 'keep our customers happy', or 'let's work together'. This is a part of developing relationships,

understanding business managers' goals then collaborating to work towards those goals.

We can therefore summarise the characteristics of a collaborative coping response as:

Understanding of business needs:	High
Level of formality:	Low
Emphasis:	Adding business value
Attitude:	Keep customers happy
Alignment:	Dependent on goals of either the business manager or the business unit

The technological coping response can be characterised using these same criteria.

8.4 The Technological Coping Response

During this study three organisations were identified where a technological coping response was identified. They include:

- 1 A large Australian financial institution that has an IT budget of AUD\$1 billion and 1,600 IT staff;
- 2 The Australian branch of a large consumer goods manufacturer based in Japan; and
- 3 A small Australian manufacturer of communications and navigational equipment.

Participants from these organisations were then recruited and interviewed. These participants are M3, T8, T15 and T16.

As previously mentioned, the interaction of variables within the locus of comprehension and locus of control mean that some IT managers are unable to form relationships with their business peers. The following conversation took place between myself and M3 as he described the situation in his organisation.

F. ... is the senior management of the IT group here actively trying to develop relationships?

M3. Certainly not with our division. They're invisible. I don't think I've been formally introduced to the gentleman. And the way the business holds its meetings, it has senior executive meetings for its operating groups, that is, those who sell things. Then I think it has separate meetings for support services, and we never see that. But there is no communications that comes out of the IT group. There is no monthly newsletter or anything.

F. Do you think that is one of the issues regarding their poor credibility?

M3. Yes. Absolutely. When people can't see or don't know what is happening they tend to distrust it then you lose credibility. And they've taken, I guess, the classical IT view and arrogance. 'Well, we know how to do it and just go away and leave us to it'. It just doesn't work for anyone else.

F. The next question I was going to ask following on from that was 'why do you think the IT group is doing this?'

M3. I think... I suspect that at a senior level they are being driven by 'well how much are you spending?' ... there's no SLA's, there's no 'what service and service levels are you providing to your customers?' As I've said, they've just improved the desktop and desktop support and that's what most people see and feel and that's improved things a lot. But I do suspect that they're probably not being given the right direction at a very senior level, and then there's no will within the IT organisation itself to go out and do that for itself. ... in response when people attack them or anything they get defensive and basically retreat further and further into their little space (paras. 75-82).

In each of the companies identified where this response was dominant the senior IT manager reported to the chief financial officer. Respondents also indicated that IT was seen as a cost centre and the mental models of business managers were, in general,

that IT did not, or could not, provide competitive advantage²². In this situation IT managers tend to retreat from the business and concentrate on the technology, hence the name of the response. All of this has an effect on alignment.

8.4.1 Alignment within a Technological Coping Response

All of the participants associated with a technological coping response indicated that in their organisations business and IT strategy development were isolated from each other. Using the taxonomy of Teo & King (1996) these organisations engaged in stand alone planning. T16 provided an overview of strategy development within his organisation (the financial institution).

F. How have IS strategies traditionally been developed here?

T16. Traditionally, reactively. So, not in partnership with the business. So, basically what happens is that we go through what is called the BSR process - business, strategy, review. It happens yearly and each business unit from the highest level, usually driven by the CFO of that business unit, start to bubble around, come up with some ideas on how they are going to improve profitability, improve revenue, reduce costs and other strategic measures like customer satisfaction or community involvement, whatever it might be. So they are working on all these strategies and then when it comes to thinking about an IT solution they might engage someone or might bring in some consultants or bring in a vendor or whatever and decide then how much roughly that is going to cost. They go through a number of cycles where they look at it, summarize it, present it to various government bodies and finally to the executive office and the board. And out pops a whole bunch of projects that then get delivered to IT. And in the past we basically react to these things. So, if you want to replace this for \$2 and do this for \$10 and do this for \$5 and there is

²² In a private conversation held on 22nd March 2007, M3 said that the rhetoric of his CEO is that IT is a valued partner providing competitive advantage. However, the actions of this CEO all indicate that he perceives IT as a cost centre.

no context on the how, which is usually the missing bit. So, that's the process. It happens yearly and we spend roughly \$1 billion a year on IT. Change or project work is roughly \$360 - \$400 million a year on projects. And the money gets allocated as appropriate. So there has been a recognition that that process is inefficient. There are a whole lot of gains to be made especially in reaching our strategic objectives. So there is a program that's been kicked off to try and start to address that. Start to get into...

F. So, that has been a fairly formal process?

T16. Its ... No. In terms of a formal process, no. There's no... for example, there's no formal way to size an idea. There's no formal way of looking across business units to look for synergy. There's no identification of the appropriate skills to do something like this. Last year I did some enhancement work. This year I will do some internet banking stuff. I will just make it up and put together a little presentation and present it up [T16 appears to be paraphrasing business unit managers actions here, not his own].

F. So basically what you are saying is that the business presents, or traditionally the business has presented IT with a series of projects for the coming year...

T16. Yes.

F. ... and effectively IT doesn't have a real strategy in itself. It just has a series of projects?

T16. It's reactionary. So the IT strategy is not built at the same time as the business strategy and properly aligned (paras. 37-44).

It appears that an administrative planning approach has been adopted (Earl 1993). One of the characteristics of this approach is that although there tends to be a high implementation rate, alignment to business strategies tends to be low (Earl 1993, p. 9). Both M3 and T8 described a similar situation in their organisations.

T8 is the IT manager of a small Australian manufacturer where the principal managers have an engineering background. When asked about strategy development within this organisation T8 replied:

Well, really when you look at the strategic plan there wasn't an overall plan. It was just strategic plans for each functional area. I had to do one for my functional area not knowing anything about the other functional areas or the overall business aspect. So I talked to the financial controller and he would say 'Well, what do you want to do to the network this year?' So I would build things in to make the network more stable and to prepare for growth because we've gone through a really big growth spurt in the last couple of years. So that's all I knew that I could do, and be allowed to do as well (para. 89).

When asked about the ramifications of this situation T8 replied:

It's huge because... you can't suggest anything to the business that will be good for the business. You have to wait for it to come from the business. This is how it's actually set up in this company. You will be set these unrealistic things to accomplish and they won't talk to you or communicate. The VPN is a perfect example. They said 'You need to save \$100,000. You're going to get these kinds of lines to these departments/state branches' and yet know nothing about communications which I had looked after for the last 5 years. Nothing about 'We know nothing about communications which is why it was outsourced in the beginning. Now you want me to bring it all back in-house. We haven't got the backup here to be able to do those kinds of things'. Yet, there was no leeway, so we had to pick the best way we could to accomplish that to save that amount of money. So we were just lucky that they told us that the next bit was 'We need that money to be able to change the database from text to Windows' (para. 99).

M3 also described an administrative approach to IS strategic planning in his organisation.

All of this indicates that, where a technological coping response is dominant, then:

Alignment of business and IS strategies is low**8.4.2 Level of Formality within a Technological Coping Response**

There are two aspects of formality identified during this research. Firstly, the formality surrounding strategy development then the formality of communications between business units, including IT.

In the section of transcript, above, T16 indicated that there was some level of formality involved in developing business strategies. T8 also indicated a similar situation. However, the quotation from T16 also indicates that there is a lack of formality when it comes to scoping and costing a project and in determining its overall impact on the business. The quote from T8 indicates a similar situation and then says that determining IT projects, other than network maintenance, tends to be an ad-hoc process. M3 described a similar situation in his organisation.

But, these same subjects indicated a relatively high degree of formality when describing communications between IT and other business units.

The quotations above from T15, T16 and T8 all indicate that the IT units are not involved in determining strategies. Their units are presented with a project which they are then required to complete. There is little ability to form the informal networks that are common within a collaborative coping response. During an interview T8 gave an example of the lines of communication within her organisation when discussing the development of business strategies.

F. Who sets the business strategies and goals?

T8. That's set by the executive committee. There's 5 people on that: financial controller, manufacturing director, engineering director, marketing manager and managing director.

F. Do you have any input to that?

T8. No. The only way I can work through to get any input is through the financial controller.

F. Have you had any success doing that?

T8. No. He has tried to bring things to their attention as well, but been mowed down when it comes to IT.

F. How are those strategies and goals communicated to you?

T8. Luckily enough, a couple of years ago it was the first time middle management actually got a copy of the strategic plan.

F. That was the first time??

T8. That was the first time! (paras. 74-82).

T8 then said that prior to middle management being issued with a copy of the organisation's strategic plans (one for each functional area) strategies were disseminated on a need to know basis. This led to a situation where she, as the senior IT manager, was asked to provide certain services without knowing the context or reason why.

M3 described a similar situation in his organisation regarding communication. He was asked, as a senior business manager, whether he was familiar with the IT strategies. He replied:

To a degree. In this organisation I'm on the business side, so we are only getting it through the formal meetings and communications (para. 48).

The foregoing indicates that, where a technological coping response is dominant then:

The level of (communication) formality is relatively high.

This does not imply that there is no communication. There often is. But as the participants of the first focus group session held on 9th August, 2002 discussed there is a difference between communication and effective communication. They associated the former with idle chit chat around a coffee machine, whilst the latter involves the development of mutual trust and mutual influence (Campbell, Kay & Avison 2005). According to Nelson & Coopriider (1996) these then lead to the formation of shared domain knowledge and then to improved IT performance. This research indicates that the development of shared domain knowledge is unlikely where there is a reliance on formal lines of communication.

8.4.3 Emphasis of IT Personnel

Whilst the emphasis of IT managers working within a collaborative environment was adding business value, the emphasis required of IT groups operating within a technological environment was to provide a low cost reliable service. T8, the senior IT manager of a small manufacturing firm, gave an indication of this when she said:

We don't do anything very extravagant. We never had the problems that IT had where people were just let loose and then blew their budgets and just kept on going. We have always been a very conservative company and we've always been that way. So we only jump to products when they're very stable as well. So we've had a very stable environment as well. And I guess that's the thing. We've been too good at our job that we haven't had problems where they've had to look at IT (para. 62).

Just prior to this statement T8 had been discussing the relationship between senior management and IT. The lack of communication meant that these managers were not aware of what the IT group did. Furthermore, they did not seem to care providing the system was working. T8 summarised this attitude as:

They're not aware of the other things we've got, or the structure we've got that actually help people do their job better. They're not aware of the work we've done on the intranet to date, or how valuable that's been. They're just not aware. Because we're the quiet achievers they don't know what we do (para. 58).

This lack of relationship and awareness then led to a situation where:

... they [senior management] will [look] back at IT and say 'Well, how has this brought any value to the business?' Well, we've brought you practically nothing except a stable platform, because you've allowed us to do nothing. You haven't allowed us to grow. We're not allowed to train up our staff. The history was to keep it dumb so that it was cheap. So that's the history from where it's come from. And that's why you've got what you've paid for now. Although you've got people there who are quite accomplished and are smarter than you think they

are but because of that communication thing that is there, you will never know (T8, para. 101).

T8 was the first IT manager I interviewed who had adopted (but not by choice) a technological coping response. The previous excerpts from that interview alerted me to a difference between her attitude and situation and those of other IT managers I had interviewed to that date. When I identified other organisations where a technological coping response was dominant and recruited subjects I was sensitive to this difference. M3, an ex-CIO who is now a senior business manager within a large multi-national consumer goods manufacturer, described a similar situation in his organisation. When asked why he thought this situation had arisen M3 replied:

I suspect that at a senior level they are being driven by ‘Well, how much are you spending?’ rather than... [M3 changes direction in conversation] there’s no SLA’s, there’s no ‘What service and service levels are you providing to your customers?’ ...I suspect that they’re probably not being given the right direction at a very senior level, and then there’s no will within the IT organisation itself to go out and do that for itself (para. 80).

M3 described an intriguing situation in his organisation which has an IT group that is responsible for maintaining IT infrastructure. However, this organisation was also implementing an ERP system at the time of the interview. This was costing the organisation some AUD\$3 million. The official IT group was not involved in this project. The attitude of the business and business managers to this project was entirely different to attitudes held towards other IT. M3 described the difference between the two this way:

*...it sees the ERP project as **the** business project. It’s not an IT project, it just happens to have a very strong IT component and influence, but it’s about the business and the way each part of the business is going to change it, and the way it influences customers where the IT group is seen as a cost. They sort of have a shell-shocked mentality and sort of all closed and not interested in functioning with the business. And the business sees them as something apart. Now,*

chicken and egg – which one created which, I'm not sure. But you can see that pattern of behaviour and go, yes, there is a really systemic problem there which would take a hell of a lot of effort to break out of, particularly if IT don't want to do it. And they are the ones who are going to have to show leadership and run 500 times harder than they normally would to build to get to square one (para. 164).

The theory being developed in this dissertation demonstrates that the situation is, indeed, systemic as suggested by M3, above, and Ciborra (1997). The interaction between factors within the two loci, shown in Figure 8.2, encourages a particular response from IT managers when they are presented with strategy ambiguity. The actions of these IT managers then tend to reinforce the perceptions of business managers when contemplating IT, so strengthening the status quo.

Both T15 and T16 indicated that in their organisation, a large financial institution, the emphasis of IT was again on providing a low cost reliable service. Once again, this emphasis was a reaction to pressures being placed on the IT group by the business. T15 described the situation as:

... what I've picked up on in the last couple of years has been the usual you're too expensive, and you're slow. You are a cost centre. You will do as you're told. So in terms of value add, the perception is that there is not a lot of value add there, given you are just a cost centre to serve my whim, it's to me it's just very strained. Not as good as it could be. IT tends to focus on itself rather than on its customer and hence the perception of the business is 'well, you are just costing me money. I have the capability here, I have the budget to do what I wish to do', and as T16 was just saying, they can bring in external IT if they like. There's no driver within the organisation to drive total cost of ownership of particular applications or systems. The business just keeps buying more and more and more without understanding the dynamic behind that, which is continually increasing IT cost (para. 9).

This quotation alludes to a problem identified by T15 and T16. All projects within their organisation are costed on an individual basis. The cheapest solution for that

project is often selected and costs beyond implementation are not considered. A result is that whilst costs for an individual stand-alone project may be minimised the overall IT costs to the organisation are sub-optimal. There tends not to be standard architectures in place and lessons and skills from one project tend not to be made available to other projects.

It appears, then, that the emphasis of an IT group adopting a technological coping response is to:

Provide a low cost, reliable IT service.

It also appears that in most situations, at least of those investigated during this research, that this emphasis is not being driven by the IT group, but by business.

The last quotation from T15, above, also indicates a common thread regarding the attitude of IT managers adopting a technological coping response. This is now considered.

8.4.4 Attitude of IT Managers Adopting a Technological Coping Response

The quotation from T15, above, indicates that many IT managers are coerced into “doing what they are told” by business managers. This, then, becomes ingrained to the point where it becomes a general attitude of IT managers who adopt a technological coping response. T15 described the mental models held by IT managers within his organisation.

So to run IT as a business you need to understand who your customers are, what your products and services are, and look at things from a product and service perspective so that you understand the dynamics of the small business, so that if you spoke to a team leader in IT and said “Well, how many people have you got working for you?” and they say “About 20 people, about 20 developers” and you say “Well, you’ve got a \$2million small business. Who are your customers?” Just they give you this queer look as if to say ‘what are you talking about?’ So when you actually go through it with them and say ‘Each business unit is your customer. What are your product and services?’

Again, they don't understand what you are saying. But when you get down to it and say, 'Well, your service is coding, and your product is the lending system' it starts to make sense. So then you can say 'OK. To keep your customers happy as a small business unit, what do you need to do? Cut your costs, manage your efficiencies and all that.' Which is a totally different mind-set to what they have today which is come to work 9 to 5. Someone gives you a form which says 'go and code this.' I do it and hand it off (T15, para. 33).

The earlier quotation from M3 also indicates that the IT managers within his organisation had also retreated from the organisation and were simply doing what they were told. In the words of M3 they had lost the will to do anything else.

All of the participants who were working within an organisation that exhibited a technological coping response described the attitude of IT managers as:

I do what I'm told.

We can therefore summarise the characteristics of a technological coping response as:

Understanding of business needs:	Low
Level of (communication) formality:	High
Emphasis:	Low cost, reliable service
Attitude:	Do what I'm told
Alignment:	Low

The characteristics of the two coping responses can now be combined with the models shown in Figures 1 and 2 to complete the model of the theory being developed in this thesis which is shown at Figure 3.

8.5 Discussion

The model shown at Figure 8.3 indicates that the interaction of factors within the locus of comprehension and locus of control influence the actions of both business and IT managers when they attempt to implement strategies. Actions of business managers, as they attempt to implement business strategies whilst being impacted by

factors within the two loci, create strategy ambiguity. This was identified as being the core problem of IT managers when considering IS/business alignment.

The interaction of factors within the two loci then influence the actions of IT managers. Depending on this interaction, and the value of variables, IT managers tend to adopt one of two responses. They can either collaborate with their business peers and attempt to support the business strategies being implemented, or they tend to retreat from the business and concentrate on providing a low cost reliable IT service. The choice of response is often not voluntary – the value and interaction of variables tends to determine which of the two responses is possible.

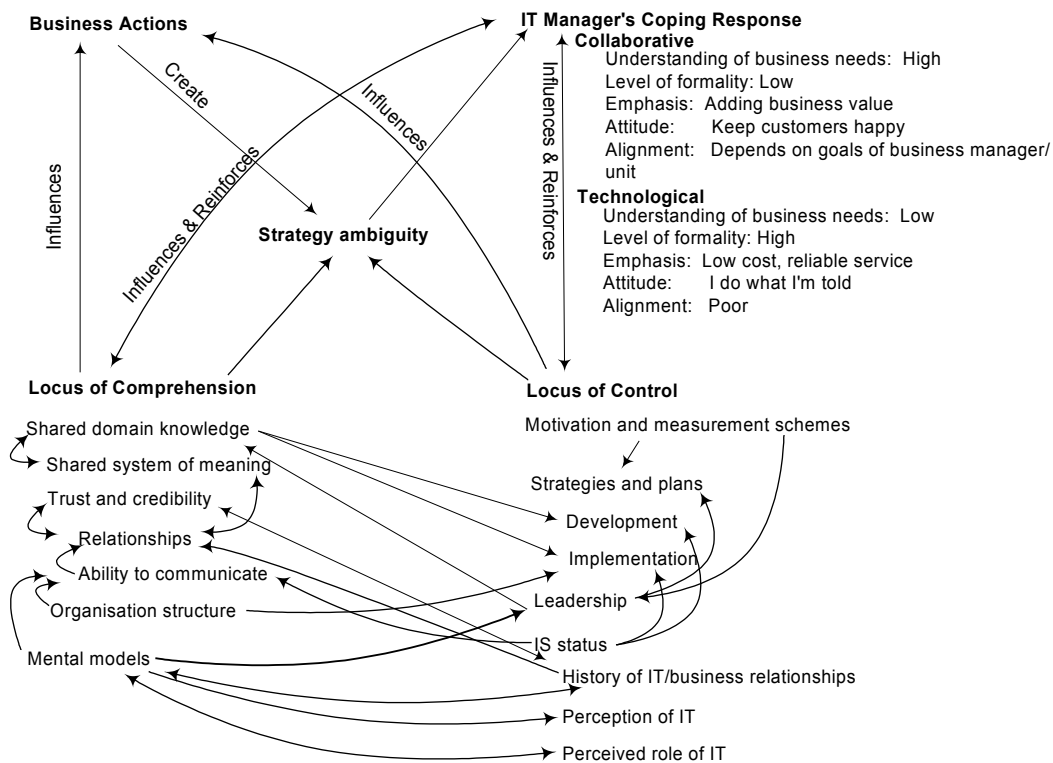


Figure 8.3. A theory of alignment that explains both the development of strategy ambiguity and IT managers' reaction to that ambiguity.

The actions of IT managers adopting a particular response then tend to reinforce the values of the variables within the locus of comprehension and locus of control. This creates a positive feedback loop making a change in response even more difficult. Kogut and Zander (1992) explain a ramification of this situation when they state “Because new ways of cooperating cannot be easily acquired, growth occurs by building on the social relationships that currently exist in a firm” (P. 383). That is,

where a technological coping response is evident alignment is unlikely to improve as managers, both business and IT, are unable to build the necessary relationships.

Business and IT are likely to remain as separate entities with management competency in the use of IT to provide competitive advantage unlikely to improve. Teece et al. (1997), when investigating the dynamic capabilities of firms, describe this situation as “*At any given point in time, firms must follow a certain trajectory or path of competence development. This path not only defines what choices are open to the firm today, but it also puts bounds around what its internal repertoire is likely to be in the future. Thus, firms, at various points in time, make long-term, quasi-irreversible commitments to certain domains of competence*” (p. 515).

Conceptually the development of dynamic capabilities is similar to co-evolutionary theory. It has been argued that it is not sufficient for IT managers to understand the business (Teo & Ang 1999), but that business managers must also be capable of managing and appropriately employing IT (Earl 1993; Feeny, Edwards & Simpson 1992). The theory developed here exhibits many of the properties of co-evolution such as embeddedness, multidirectional causality, nonlinearity and positive feedback (Lewin & Volberda 1999, pp. 526-527) as well as including many of the factors that limit the development of dynamic capabilities. As such it provides support for the contention of Benbya & McKelvey (2006) that alignment is a co-evolutionary process. It also explains why the dynamic capabilities required to effectively use IT for competitive advantage are not being developed in many organisations.

Earlier research has shown the importance of shared domain knowledge and the business competence of IT managers on collaboration between business and IT units. Following this line of investigation Bassellier and Benbasat (2004) developed a taxonomy of required business competence of IT managers. As a result of empirical research they concluded that the attainment of business competence will lead to an increase in intention of IT managers to collaborate with their business peers. Their hypothesis developed from the literature was based on the premise that “... *self-efficacy (i.e. higher business competence in our study) influences one’s favourable outcome expectations and actual technology utilization*” (p. 682). But the research quoted above indicates that the development of relationships and collaboration depends on the self-efficacy of both partners to that relationship. That is, not only

must IT managers have business competence but business managers must have some IT competence for a relationship to commence and grow (Feeny, Edwards & Simpson 1992). The current research supports the latter view. Discussion in Section 7.2.1.1 “Shared System of Meaning” in Chapter 7, Locus of Comprehension, indicated that the business managers in their focus group were critical of the Australian higher education system. Their argument was that their education was too narrowly focused within their specialisation. They argued that many business managers did not gain even the rudimentary language necessary to commence dialogue with an IT manager. Many business managers therefore tended to avoid such encounters tending to withdraw to their own “silo”. That is, self-efficacy is missing on the part of business managers. Without the development of meaningful communication and relationships it is unlikely that shared domain knowledge will improve. This, then, limits collaboration.

The above argument indicates that encouraging IT managers to gain business competence to encourage collaboration and, eventually improve alignment, may not be overly helpful. Knowledge of the business (and IT by business managers) is normally gained via relationships. If business managers do not want to form these relationships either because they do not have the necessary language, or because of their mental model, then any amount of encouraging IT managers to improve their business competence and then form relationships and collaborate is likely to be a very long term project. This reflects the experience of those managers identified in this research as working in an organisation where a technological coping response is dominant.

This same argument can be used to question the validity of repeated calls for IT managers to improve communications between themselves and their business peers. Communication requires, at minimum, two actors. If either of them is negative then effective communication is unlikely to occur. This does not mean that communication should not be attempted in this situation. It does indicate that there may be many rebuffs before the other party reciprocates. It also means that an IT manager should be sensitive to any approach from a business peer if the objective is to improve collaboration.

It can be reasonably safe to state that where a technological response to strategy ambiguity is evident then the management of IT for advantage is not one of the internal competencies that the firm is pursuing. The theory developed here helps to explain why it is so difficult for firms to develop this competence where it is currently lacking.

Whilst analysing the interview with M3 who worked in an organisation where the IT group had been encouraged to adopt a technological coping response I wrote the following memo:

If the business perceives IT as a service or cost centre the likely result is:

- IT managers who do not engage with the business and retreat to a technology focus
- An IT group separated from the business and subsequently becoming invisible
- Lack of communications leading to poor relationships between IT and business
- The creation of a bunker mentality within the IT group.

If the latter occurs it is going to be extremely difficult to change the situation.

I then made an addendum to this memo:

If you want to de-motivate staff and get crap service from them, put out the message that they are a cost centre. All of the above will occur. Yes, you need to contain costs in these functions, but you also need to get superior service from them. It's all about leadership, motivation, incentives, measurement and structure.

This was the situation within M3's organisation. It also represents the situation within the organisations of T8, T15 and T16 where a technological coping response was dominant. Later I wrote another memo whilst analysing the interview with M3:

This whole section indicates that the view held by senior management of a function will, to a large extent, determine how well that function integrates with the business.

If, as is the case with the org at which M3 works, IT is seen as a service function and is not perceived to add any value then this will permeate the whole worldviews of both the business and IT units. Measurement and incentives will be based around cutting costs. They will not be invited to decision making meetings. The IT management will react to this and not put forward any ideas on how to improve the business. The IT unit will retreat to a technology base, not communicate with the business and not put any effort into developing relationships.

When this occurs the IT unit will be seen by all other levels of the business hierarchy as being separate from the business, uncommunicative, unresponsive and difficult to get along with. At this stage it is going to be extremely difficult to turn the situation around.

Note that M3 is indicating that this situation has occurred with all those units that are seen as supplying a basic service (eg logistics), not just IT.

This, then, helps to explain the results of earlier research. Sabherwal, Hirschheim & Goles (2003) investigated the dynamics of alignment using a punctuated equilibrium model but with mixed results. Their literature review indicated that during evolutionary (that is, stable) periods that there should be a constant high level of alignment. They did not find this. The level of alignment during these periods was stable but it could be either high or low. The model then predicts that during revolutionary periods the level of alignment should change and then be maintained during the following evolutionary period. Sabherwal, Hirschheim & Goles found that in some cases their evidence supported this hypothesis but in other cases it did not. They hypothesized that:

... revolutions may be followed by post-revolution adjustments to the strategic IS management profiles, either to reinforce them or to take a step back toward the pre-revolution situation (p. 339).

The theory developed in the current research may help to explain both anomalies as they relate to strategic alignment. Firstly, depending on the coping response being adopted by IT managers as a result of the influence of variables within the two loci, there could be either high or low levels of strategic alignment during evolutionary periods. The theory indicates that, due to the creation of positive feedback loops, this

situation could be difficult to change - hence the stability²³. A revolution, or organisational crisis of some kind, may provide the conditions to allow the adoption of a different response by IT managers. T15 described such a situation that occurred at his previous place of employment (Fin1):

In Fin1, which merged with [named 3 other banks] in one go. I managed the systems integration of those four banks and it was evident at that time that that was when IT and business really came together because all of a sudden coming together, had to come together on a single product set, single systems architecture, branch network - everything had to come together. And at that point in time business then got engaged with 'Well what product do I want?' 'What product do I need?' IT sat behind and said 'Well, what systems do I need to move to this. Is it the homegrown system that Fin1 had?' And they went through all these conversations where the relationships started to grow from that. The integration project then delivered the systems and the products that had been spec'd out by that unified group. And that's when things started to get a little more comfortable between business and IT. I think at the same time, or similar time, Fin1 - its articles of association were changing. It was becoming a takeover target. Prior to that, the 10 years since Fin1 became a bank its articles of association said that 95% of the account holders had to agree to any merger. So nobody would take it on. But when that 10 years was up it got back to normal, and so the CEO at the time sat down and said 'We need to have our share price at around \$23 to stop any takeovers.'" And they went through an exercise called Best Bank - 12 month to deliver. Again, 150 top executives in the bank, including business and IT, were all locked in a room, and I was one of them, for 3 months to go through idea generation to say how do we actually improve our share price, reduce our operating costs etc. Our

²³ This interpretation is incorrect if the terminology of systems thinking is strictly applied. Positive feedback loops actually create instability – the classic vicious or virtuous cycles that lead to exponential growth, or loss, in variable values. This means that changing from a vicious to a virtuous cycle (or vice-versa) is unlikely. This then provides the use of the term “stability” used here.

exercise again reinforced the capability of IT to further innovation and change for the business guy. Because you were locked in a room you actually had to work together. Each idea was fully costed and I think there was something like 3,500 individual ideas went through that costing team. We knew exactly what the costs were, what the payback was. The executive got together and agreed on 1,000 ideas that were then clustered together in projects and IT delivered those projects. Share price I think went up to \$21 from \$8 to \$21 in a very short period of time as a consequence of that. And I think the legacy of that was that IT and business can work together, and did work together and work well (para. 51).

This quotation indicates that during the period described by T15 the mental models of participants changed. The perception of IT and IT's role within the organisation changed. This, then, allowed the development of communication, trust, relationships, shared system of meaning and shared domain knowledge between business and IT managers. These changes were then maintained into the post-revolutionary period. But this change is not a given. There is no guarantee that the mental models held by managers will change during a crisis. Changing mental models normally requires the questioning of underlying belief systems (Senge 1990, pp. 174-204) and the adoption of double-loop learning (Argyris 2003, p. 70). Argyris (2003) argues that neither of these tasks is readily adopted by managers and that implementing change that requires such is extremely problematic. In the event that the mental models of participants do not change then a return to the pre-existing coping response of IT managers is almost guaranteed. This, then, helps to explain the results observed by Sabherwal, Hirschheim & Goles (2003). It also questions the calls within the literature for a change in management attitude (Henderson & Venkatraman 1993, p. 480). Whilst this is needed the theory developed here indicates that it may not be so easily achieved. Factors within the organisation tend to continually reinforce the existing mental models held by managers.

Grant (1996) argues that whilst the use of coordination, via the imposition of rules and procedures, may be an efficient method of transferring knowledge between individuals within an organisation it is not particularly effective where a problem

situation crosses functional boundaries. In the latter situation the encouragement of cooperation is more effective (Grant 1996, p. 119). This seems to reflect the two coping responses. The technological response tends to use rules and procedures to manage IT but there does not appear to be a significant transfer of knowledge between various business functions and IT. As predicted by Grant (1996) these organisations do not appear to be gaining competitive advantage via alignment. Conversely, there does appear to be a reasonable transfer of knowledge between units where collaboration and cooperation is either encouraged or employed.

It should not be assumed that moving to a collaborative coping response will improve an organisation's alignment and performance. As previously discussed, when this response is adopted IT managers align their actions with the goals and strategies of their business peers. Because of other factors within the organisation there is no guarantee that the actions of business managers will be supporting the business goals and strategies as they were conceived. Encouraging collaboration between business and IT managers could have many unintended consequences. The core problem of IT managers when considering alignment, developed in Chapter 5, indicates that business strategies are often modified, or even ignored, during implementation by business line managers. Much more emphasis should be placed on achieving business alignment – alignment between business strategy and business infrastructure. In their seminal paper Henderson & Venkatraman (1993) argued that the most popular method of attempting IS/business alignment was to use business strategies operating through business infrastructure to impact IT infrastructure (p. 477). The current research indicates this is the underlying model in use by those participants adopting a collaborative response. However, this research also indicates that it should be viewed with extreme caution due to the unintended consequences.

Figure 8.3 indicates that decisions and actions by all relevant actors within an organisation will tend to reinforce the dominant coping response. Another phenomenon that reinforces the status quo was uncovered whilst validating the reasonableness of the theory developed in this thesis. The theory was shown to a number of the subjects of this research and to other IT managers to gain feedback. When describing the two responses a common remark was “I used to work for an organisation like that, but I left.” Among others, this comment was made by T1, M3

and an academic at UTS with whom I work. That is, it appears that IT personnel tend to self select the type of organisation that they wish to work for. Some people are content working with technology, ignoring the business. Others are happiest when they are able to collaborate with their peers. If a person's mode of operating is not in accordance with the dominant coping response they will tend to leave the organisation. This phenomenon is not unknown in the literature. For example, when discussing the formation of organisation culture Bell (1999) makes the statement:

*“... these members joined the organisation because of the confluence of their personal values with those **stated** by the organisation and the **perceived** (again, not necessarily intended) organisational hypocrisy drives them out” (p. 4, emphasis added).*

More research is required to determine the level of self selection of IT managers to organisations where the stated culture, working conditions and coping response coincide with their own values.

M3 also gave evidence to indicate the difference between stated and perceived values. He was asked whether the IT group within his current organisation was considered to be a cost centre rather than an area of advantage. He replied:

Correct. As I said, I think some of their [the IT group's] problems are driven by senior management's view. But from what I can see IT is doing nothing to help that situation (M3, para. 90).

And:

I suspect that at a senior level they are being driven by 'Well, how much are you spending' rather than... there's no SLA's, there's no 'What service and service levels are you providing to your customers?' ... I do suspect that they're probably not being given the right direction at a very senior management level, and then there's no will within the IT organisation itself to go out and do that for itself (M3, para. 80).

When then asked whether he thought this IT group could change its response, he replied:

No. I think they've built themselves in such a way that they're almost impervious to a strategy change. They tend to see their role as purely mechanistic. I guess a technical delivery rather than a business value type thing which is more where the strategies tend to happen. I think that is where they're falling down and it's going to take some effort to change (M3, para. 86).

In a later conversation, not recorded, M3 indicated that the rhetoric of senior management within the firm is that the role of IT is to provide competitive advantage. However, the actions of senior management do not support this. IT is seen as a cost centre.

The situation described above is not unusual in its pervasiveness – people become committed to a limited set of actions as a result of entrenched mental models. According to Sterman (2000):

*The mental models people use to guide their decisions are dynamically deficient. ...people generally adopt an event-based, open-loop view of causality, ignore feedback processes, fail to appreciate time delays between action and response and in the reporting of information, do not understand stocks and flows and are insensitive to nonlinearities that may alter the strengths of different feedback loops as a system evolves. ...the greater the dynamic complexity of the environment the worse people do **relative to potential**. Further the experiments show the misperceptions of feedback loops are robust to experience (p. 27, emphasis in original).*

The theory developed in this dissertation clearly indicates that the process of improving strategic alignment is dynamically complex. Given the quote from Sterman (above) it is not surprising that it has proved to be intractable for so long. Even when managers are shown that their understanding of a complex dynamic situation is flawed they are reluctant to change their mental models and adopt other strategies to deal with a problem situation (Moxnes 1998). That is, improving alignment is going to be a long term process that requires all managers to attempt double-loop learning – something we know is difficult (Argyris 2003).

Earl (1993) identified five different approaches to strategic information systems planning. During the current research one participant (T1) who was familiar with Earl's paper made the observation that in most organisations the CIO is not given a choice on which approach to SISP to adopt. The organisational environment will often dictate a particular approach. This was not specifically investigated in this research but an observation which needs further research is that it appears that various approaches to SISP can be associated with either a technological or collaborative response to strategy ambiguity and alignment. It appears that a technological response encourages the use of either a technological or administrative approach to SISP. Conversely, a collaborative response appears to encourage the use of either a business-led or organisational approach to SISP. I did not encounter any use of the method-driven approach to SISP however this could be due to: (a) the small sample size within this research and (b) that I did not specifically investigate this area.

Using the taxonomy of plan integration used by Teo & King (1996) I hypothesise that:

- A technological response to strategy ambiguity is associated with either no planning or stand-alone planning.
- A collaborative response to strategy ambiguity is associated with either reactive, linked or integrated planning.

Further, contrary to Teo & King (1996) who believe that a higher level of plan integration between the business and IT (that is, either linked or integrated planning) mitigates IT planning problems by facilitating greater communication and understanding between business and IT management (p. 318) I hypothesize that:

- Collaboration, communication and shared domain knowledge is required between business and IT executives before the higher levels of plan integration (linked or integrated planning) are possible.

All of the previous hypotheses need to be confirmed with further research.

Although causality has not been claimed to exist between variables in the model shown in Figure 8.3 I believe that there is, at minimum, a correlation as shown by the

arrows in that figure. That is, the model could be used to develop hypotheses to be tested in future quantitative studies and so validate the theory developed here.

One final comment. It would appear that an attitude towards IT similar to that espoused by Carr (2005), that IT is a commodity, will inevitably lead to a technological coping response. This may be appropriate for some businesses in some industries. However, it may not be appropriate if senior management relies on IT to give it an advantage over competitors.

8.6 Wrapping Up

Maes et al. (2000) argue that alignment research should:

- Start from an unequivocal definition of alignment
- Consider alignment as a dynamic process
- Consider alignment at different levels, ranging from strategy to implementation
- Attempt measurability
- Take the relevant business and technological contexts into account
- Pay clear attention to the human factors
- Be well balanced, taking the practical consideration of management seriously; no component, not even strategy, is by definition leading (Maes et al. 2000, p. 8).

Of these, this research has addressed all except the first and fourth both of which Maes et al. argue have proved to be extremely problematic for many years. Given that I have argued that alignment should more properly be considered a process rather than an end state it is likely that a definition and definitive measurement of alignment will remain problematic.

The alignment literature tends to assume that the dynamics of alignment, where it is even considered, is due to forces external to the organisation most notably market forces (see, for example, Henderson & Venkatraman 1993, p. 473). The current theory indicates that most of the dynamics of alignment can be explained by forces within the organisation. This reflects experience within system dynamics research (Sterman 1994, 2000). Because of the type of data collected here (qualitative) and the type of

analysis conducted it is not possible to positively identify sensitive variables within the system - those that will provide the most improvement to the alignment system for the least effort. Nor is it possible to positively identify those variables that may have the greatest impact on alignment regardless of effort. However, it appeared during analysis that those variables with the greatest impact could be the motivation and measurement schemes applied to managers and business units, and the mental models of senior management regarding the role of IT within the organisation. Having said this, I am extremely aware of the inability of most people to determine the dynamics of a system consisting of more than one causal loop (Moxnes 1998). If my hunch regarding the mental models of senior management is correct then this theory indicates that the adage “an organisation gets the IT it deserves” could well be true.

The previous paragraph hints at a major contribution of this research. It demonstrates that it is the inter-actions between the various enablers and inhibitors to alignment that is of most importance, not the identification of those variables per se. That is, alignment is a dynamic process and should be studied as such. This research shows quite conclusively that alignment is not the end-state so often assumed within the alignment literature (Maes et al. 2000).

Finally, most people can identify the dominant response to strategy ambiguity within an organisation by talking for a brief period with a few members of senior management. The theory developed within this thesis does not provide a definite way forward for managers attempting to improve alignment. It does, however, provide a basis for discussion between senior IT and business managers. They can then decide on an appropriate role for IT within their organisation and be aware of how the system of inter-related variables within their organisation may either work for, or against, achieving their goal. Achieving alignment should not be the responsibility of IT management alone. In many instances the choices IT managers can make regarding alignment are bound by the inter-action of the variables within the locus of comprehension and locus of control.

9 Conclusion

This thesis set out to address the general research question of:

Why are some organisation able to achieve a satisfactory level of IS/business alignment whilst others cannot?

The starting point for this research, as it is for much research into alignment, was the seminal paper of Henderson and Venkatraman (1993). These authors presented a model showing various types of alignment and how, theoretically, alignment may be achieved. Henderson and Venkatraman (1993) proposed that there were two levels of an organisation to be considered with respect to this task – the strategic and operational levels. As they were considering alignment between the business and IS these two dimensions needed to be included in the model. The combination produced a 2 x 2 matrix as shown in Figure 9.1. According to this model goals and strategies are developed at the strategic level and implemented at the operational level. Henderson and Venkatraman argued that alignment can and should occur between each of the four quadrants of their model.

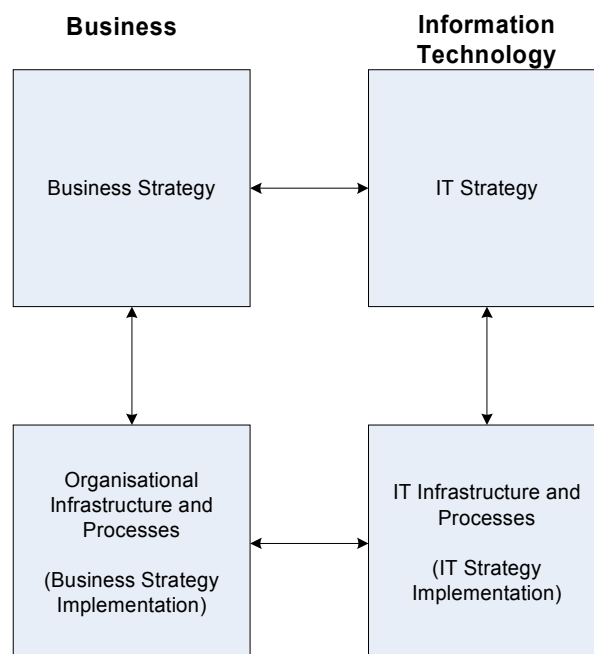


Figure 9.1. A simplification of the Strategic Alignment Model developed by Henderson and Venkatraman (1993).

A review of the literature shows that the major emphasis in alignment research has been on aligning business and IT strategic plans. That is, alignment between the top two quadrants shown in Figure 9.1. There has been very little research on the implementation of those plans although a few researchers have recommended this, most notably Ciborra (1997). Earlier research has also indicated that aligning business and IT strategies is the major concern of executive level IT managers when considering alignment (Chan 2002). This finding was confirmed in this research and reported earlier in this dissertation. It is at this point that a conundrum occurred in my current research.

Prior research has implicitly assumed that the business strategies documented within business strategic plans will be implemented by the business. Therefore aligning business and IT was believed to be a case of ensuring a high level of integration of business and IT plans during strategy development (King & Teo 2000). This belief dominates business/IS alignment research and is rarely questioned. It is demonstrated by the almost total concentration of alignment research at the CEO and CIO level – something that any cursory investigation of the alignment literature will reveal. This is in spite of Henderson and Venkatraman (1993, p. 481) arguing that strategy implementation is just as important as strategy development. By adopting a different research strategy to that normally employed, and asking practitioners from various levels of their organisation of their experiences with alignment, I was able to uncover this assumption. IT managers, where they are given the opportunity, attempt to align their actions at two levels: with the strategies developed at the executive level; and with those strategies they can see being implemented at the operational level. When considering strategic alignment it appears that alignment between business strategy development and implementation is just as important as alignment between business and IT strategies and plans.

This then meant that the general research question identified above was refined to become:

How do factors within an organisational setting impact the ability of senior IT managers to identify and act upon the business strategies in use?

Prior research has indicated that there are a number of variables that either enable or inhibit the development of alignment of business and IT strategies. This research has confirmed these variables but with the addition of two that have been largely ignored in the past. These two are: the mental models held by various actors on how things operate within the organisation; and the motivation and measurement schemes being applied.

The contribution of this research has been to demonstrate that it is the interaction of these variables that determine:

- Whether a senior IT manager will be invited to the business strategy development process;
- How both business and IT strategies can be modified during implementation. Business strategies are often modified during implementation. This creates the ambiguity between espoused and realised business strategies that is the major concern of IT managers when considering alignment;
- The actions available to both senior and lower level IT managers when they react to strategy ambiguity;

Where the inter-action of variables makes it possible IT managers will collaborate with their business peers to achieve the business managers' goals. It is likely that senior level business managers' goals are related to those strategies held within strategic business plans. Therefore there is the likelihood that the actions of senior IT managers support the goals and strategies held within business (and IT) plans. This confirms the research of Chan (2002) who found that those organisations that had a high level of strategic alignment also had a high level of collaboration between senior business and IT managers.

However, these strategies are often modified during implementation at the lower levels of an organisation. The theory developed here explains why. There is no guarantee that the goals of lower level managers actually support, in more than a superficial way, the strategies and goals developed by executive management. This can lead to an interesting scenario.

Executive level IT managers can work conscientiously to align IT strategic plans with those of the business. Similarly lower level IT managers could be aligning their actions with those of their business peers. However, the actions of the lower level business managers may not be supporting the strategic business plans developed at the executive level. Misalignment can still occur even though all IT managers believe they are supporting their business peers. Relating this to Figure 9.1, alignment can occur between the upper two quadrants and between the lower two quadrants. But, there may not be alignment between the upper and lower levels.

Where conditions are not conducive to the development of relationships IT managers will tend to retreat from the business and concentrate on providing a reliable, low cost IT service. The response adopted is a result of the dynamic behaviour of the enablers and inhibitors within the alignment system. Individual IT managers are often not in a position to make an informed choice.

The emphasis placed on strategy implementation at the lower levels of an organisation is an essential part of this research. Most prior research into alignment has concentrated almost totally on actions at the executive level. It ignores strategy implementation assuming that it is unproblematic. The research reported in this thesis indicates that, rather than being unproblematic, it should be a major concern of both practitioners and researchers. Rather than concentrating on just one form of alignment identified in the original strategic alignment model of Henderson and Venkatraman (1993) it appears we must consider all together. This research indicates that they impact each other and should not be considered in isolation.

The theory developed here indicates that a self reinforcing feedback system is created which resists any attempts to change the current response of IT managers to strategy ambiguity. This is in contrast to much prior alignment research which has often attempted to determine the causal relationships between a limited number of variables with the hope that a single lever could be identified that can be used to improve alignment in any organisation.

Rather than finding a convenient lever that can be used to improve strategic alignment this research indicates that strategic alignment is likely to remain an intractable problem for many organisations. The theory developed from this research indicates

that, rather than there being a single lever, many variables will need simultaneous attention. Unfortunately some of these are related to the beliefs and assumptions held by both individual managers and the organisation at large. These are notoriously difficult to change (Argyris 2003; Senge 1990). Some of these beliefs and assumptions are related to:

- The role of IT within the organisation. This impacts the autonomy and authority of that group constraining the actions it can take.
- The responsiveness and helpfulness of the IT group. There are many myths and stories circulated within organisations that belie the reality of the responsiveness of the IT group. Once a belief that an IT group is unresponsive becomes established it is very difficult to change. Even if an IT group is able to dramatically improve its responsiveness there could be a considerable delay before the belief that it is unresponsive changes to reflect the new reality.
- The belief that many IT personnel are uncommunicative. It would appear from this research that many business managers are reluctant to communicate with IT personnel for various reasons. One of these is that IT personnel as a whole tend to be seen as “propeller heads” speaking an unintelligible language. The isolation of various units within a business inhibiting managers from developing a shared system of meaning does not help this situation. If the IT group is considered to be a cost centre there is little advantage to a business manager in responding to an approach by an IT peer. But, it appears that it is the IT group that is believed to be uncommunicative even though other organisational factors prevent them from engaging in communication and development of relationships with their business peers.

Research in other domains indicates it normally takes a crisis before belief systems are challenged and therefore become accessible to change (Sabherwal, Hirschheim & Goles 2003). T15 described such a crisis in an organisation in which he was previously employed. It was becoming a target for corporate raiders and needed to change the way it operated and dramatically improve its share price. During this crisis the belief of the role of IT within the organisation changed. This, then, allowed the development of relationships between IT and business managers so improving trust,

communication, shared system of meaning and shared domain knowledge. Senior IT managers were then invited into the business strategy development process leading to a high level of integration of business and IT plans (Teo & King 1996).

However, a crisis is not mandatory to stimulate a change in beliefs providing participants are open to opportunities. T4 provided an example from his organisation where a new senior business manager with a different belief system regarding the role of IT joined the company. The IT group responded to this new working arrangement. This, then, changed the relationship between the business and the IT group encouraging a more collaborative response. The theory of alignment developed in this research opens up other opportunities to improve alignment.

It is now clear that the actions of all IT managers in their dealings with their business peers will eventually have an affect on all the enablers and inhibitors to alignment. If managers are made aware of this and how their actions, beliefs, stories and attitudes affect the overall alignment problem then there is the opportunity for a group of managers to work in unison to change the situation. These managers could be either from the business or IT. An improvement in alignment may take some years to achieve as there are inherent delays built into the system of relationships between variables.

While describing this theory to IT practitioners I have been given anecdotal evidence that some organisations have been able to improve alignment in the way just described. In most of these cases IT managers have focussed effort in two areas. Firstly they have attempted to improve the performance of the IT group and therefore change the perception of IT held by the business. Secondly, they have attempted to establish communication and the development of relationships with their business peers. The theory developed here indicates that both of these are part of a feedback loop that includes the mental models of managers. That is, they have been able to change, over time, the attitudes of business managers to IT, their perception of the IT service and their perceived role of IT. All of these are part of IS Status. The theory also indicates that there is then a flow on effect from these variables to all other variables within the model.

The major issue in the above scenario is that alignment is not just the domain of senior management. The actions of all managers will affect any attempt to improve alignment. Both business and IT managers must be amenable to an approach from the other to change the current situation. In most instances the feedback system identified in this research will severely hinder, and probably negate, any attempt by a single manager to change his or her response to strategy ambiguity and therefore change the level of alignment. The anecdotal evidence presented earlier in this dissertation indicates that in this situation an IT manager who attempts unilateral action is likely to become disillusioned. He or she will leave the organisation for one where the dominant coping response is more attuned to his or her method of working.

More research is required to understand:

1. how best to improve the understanding of the alignment feedback system by a group of managers, and;
2. the most effective actions that a group of managers can take to change the current situation.

Earlier research has indicated that many IT managers believe that the best method of addressing the second item, above, is to improve their technical expertise. This, in their view, will improve their credibility with business managers (Bashein & Markus 1997) and therefore open up opportunities for communication and the development of relationships (Campbell, Kay & Avison 2005). However the work of Bashein and Markus (1997), Campbell et al. (2005) and this current research would indicate that the reverse is more likely to be true. Communication and relationships are a prerequisite to trust and credibility. These, then, affect IS status. It may be that the tactic described above of improving IT performance to successfully change the response to alignment may not be the most effective tactic available. It appears from the evidence provided in this dissertation that a more effective method could be to develop relationships and trust so that the IT group is then in a position to negotiate realistic project outcomes, resources and time frames. The IT group must then deliver on these. This may not include improving technical expertise but being open and honest about the existing expertise and ability of the IT group.

Beliefs and assumptions are not restricted to the business scenario. Researchers also adhere to their own assumptions and beliefs. The dominance of a positivist research paradigm within IS research is well documented in the literature (Orlikowski & Baroudi 1991). It has partly led to the situation described earlier where there is an implicit belief that those strategies documented in plans will be implemented by an organisation. Once documented, it is assumed, strategies become “real” as they can be measured and tested. Because of this they have been used as a surrogate measure of alignment as discussed in the literature review. This reveals an ontological assumption regarding strategies held by many researchers – that they exist outside the observer and can be quantified and tested.

Those strategies being implemented may not exhibit these characteristics. According to Mintzberg (1988) it is often extremely difficult to identify emergent strategies – those that are implemented but are not contained within plans – at the time of implementation. They are often discernible as a pattern of behaviour by participants to external pressures. This pattern often becomes apparent only upon historical reflection. If implemented strategies just occur as a result of pressures placed on an organisation and its employees rather than a logical thought process how, then, are we to identify, measure and test them? This is an issue being faced by IT managers on a daily basis²⁴. It also needs to be addressed by researchers however the continued use of the dominant research paradigm is unlikely to encourage this.

The use of the grounded theory methodology in this research allowed participants to tell their own story. It was then my task to interpret that story. As mentioned in Chapter 4 grounded theory is not restricted to the use of a given epistemology or ontology. It can accommodate all views and it is up to the researcher to determine how it is used. In this instance it was informed using an interpretivist epistemology and nominalist ontology. Additionally, data was coded using the interactive coding family (Glaser 1978) which does not assume linear causality. On the contrary it

²⁴ I suspect, although I have no evidence, that these different ontological beliefs may partly differentiate those IT managers adopting either a collaborative or technological response to strategy ambiguity.

encourages the discovery of recursive relationships and feedback loops. This has provided an entirely different understanding of the alignment problem and resulted in a model that can explain some of the results and anomalies of earlier alignment research. It clearly demonstrates that actors are performing in a very dynamic social environment and that their beliefs and assumptions tend to influence their own, and other's, actions. This research confirms the enablers and inhibitors to alignment that have been identified in earlier alignment research. The only difference is the perspective used to inform analysis – one that has emphasized interpretation rather than the measuring of “real” phenomena. The adoption of such a perspective by others may advance alignment research in the future.

This research developed a model that indicates that the actions of actors within the alignment area tend to reinforce currently held beliefs, assumptions and actions. Encouraging an increase in communication between CEO and CIO, as has been done in the past, is unlikely to improve the situation if that communication just reinforces the status quo. We must find ways to allow practitioners to surface their beliefs and assumptions and demonstrate to them how these, and their current actions, limit future actions. This, then, identifies a useful research path: the identification and development of methods, techniques and tools that can be used to help business and IT managers uncover their implicit beliefs and assumptions regarding alignment. This will allow them to understand the effect of these on their choices and actions. It may provide the understanding they need to make different choices and take different actions. In this regard the work of Argyris (for example, Argyris 2003) is likely to be useful, as is the literature on systems and systems thinking.

This approach, however, is entirely different to most alignment research which is prescriptive. It appears that the “silver bullet” we have been looking for may be that of “self-understanding”.

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Appendix A: Participant Details

Participant					Organisation			Interview	
ID	Title	No. of Reports	Reports To:	Mgt Levels from CEO	Industry	HQ in Aust?	No. of Employees	Date of Interview	Date of Focus Grp
M1					Consumer Goods	No	>50,000		28/8/03
M2	General Manager	6	Board	0	Financial/IT	Yes	>100	7/8/03	28/8/03
M3	Commercial Mgr	12	Snr General Mgr, Consumer Imaging Products	2	Consumer Electronics/IT	No	>50,000	1/10/04	
M4	Contract Business Manager	0	GM Contracts & Transition	3	IT&T	Yes	8,000		28/8/03
T1	Managing Director	2	Self	0	IT Services, Business Consulting	Yes	3	4/3/04 11/10/04	
T2	CIO	100	CEO	1	Fast Moving Consumer Goods	Yes	>7,000	30/9/04	
T3	Unix Team Leader	6	Systems Support Mgr	4	Insurance/Finance/Investment	Yes	6,000		9/10/03
T4	IT Manager	4	Executive Manager	1	Legal	Yes	180		9/10/03
T5	IT Manager	10	General Manager, Support Services	1	State Government	Yes			9/10/03
T6	Project Manager	4	Manager Business Solutions	4	State Government	Yes	750	6/8/03	9/10/03
T7	Business Systems Manager	4	Enterprise Systems Director	5	Healthcare	No	>100,000	23/8/04	
T8	IT Manager	3	Chief Finance Officer	2	Consumer Electronics	Yes	200	29/3/05	

T9	Technical Manager	2			IT Consulting	No	30,000		9/8/02
T10	Functional Analyst				IT Consulting	No	30,000		9/8/02
T11	Senior Project Manager				IT Consulting	No	60,000		9/8/02
T12	Yield Systems Manager				Airline	Yes	26,000		9/8/02
T13	Development Project Leader				Financial Consulting	Yes	1,800		9/8/02
T14	Senior Business Analyst				Financial Consulting	Yes	1,800		9/8/02
T15	Head of Project Services, IT Strategy	14	Head of IT Strategy	4	Finance	Yes	25,000	20/4/05	
T16	Head of Architecture	7	CIO, Enterprise Services	4	Finance	Yes	25,000	20/4/05	

Notes:

- T9, T10 do not work for the same organisation.
- T13, T14 do work for the same organisation but in different areas.
- T15, T16 do work for the same organisation.
- The focus group of 9/8/02 was initially conducted as exploratory research. At the suggestion of my supervisors this then became the first data collection exercise for this thesis. Because it was not originally envisioned as being a part of this thesis participant details are different.

Appendix B: Interview Instruments

As mentioned in Section 4.3.2.5.3 subjects within the three focus groups were asked two questions:

- What do you understand by the term IS/business alignment?
- What, in your experience, are the three most important enablers and inhibitors to alignment?

Analysis of responses then led to the development of instruments for individual interviews. An example of an early instrument, for T1, is below:

T1, as you are aware, my research is on IS/business alignment.

One of the problems we may face today is your vast experience. I'm aware that you have held IS management positions in various organizations. Therefore, when you answer my questions could you try and differentiate the various organizations, but having regard for their anonymity.

I'm particularly interested in your experiences. If you've developed an opinion on some of the issues I raise, could you try and provide the experiences that have led to that opinion.

1. *What do you understand by the term IS/Business alignment?*
2. *I'm primarily interested in strategic alignment – the alignment of both business and IS strategies.*

Therefore, could you tell me whether you aware of the official corporate strategies for the organizations you worked for?

3. *Were these strategies being implemented by the organizations?*
What strategies were actually being enacted?

Why?

4. *Do you think different strategies were being enacted:-
at different levels of management?*

Within different business units?

5. *In a previous informal discussion you mentioned that you've only worked in one organization where the business strategies were commonly known and enacted. What were the features of that organization that allowed this?*

6. *Returning to your other experiences, were you aware of the official IS strategies in the organizations in which you've worked?*

Was your awareness of strategies due to your position within the organization?

7. *Were these IS strategies being enacted?*

8. *Were the business managers aware of these strategies?*

9. *How, and by whom, were the IS strategies that were being enacted actually determined?*

Were there different enacted IS strategies at various levels of the organization or between different business units?

Why?

10. *Does the visibility, or lack of it, of IT staff have an affect on alignment?*

11. *In your experience what has been the role of collaboration in alignment?*

What is required to encourage collaboration?

12. *You are aware of the theory that is emerging from my data.*

Simply, this is:-

Most line managers either do not know, or ignore, corporate strategy.

They therefore attempt to establish relationships in an endeavour to attain alignment.

If this relationship building is successful, there are two possible outcomes:

Alignment of corporate business and IS strategies, but more likely

Alignment of local short term local interests

If the relationship building is unsuccessful, it leads to the breakdown of alignment. If this occurs at senior management level it will probably lead to either the isolation or termination of the IT manager.

Is this emerging theory valid?

Can you provide examples from your experience that either validate or refute the theory.

The resultant transcript for this interview was analysed and at a later date T1 was interviewed a second time. The instrument used in that interview is now shown:

You mentioned over lunch one day that you are starting to believe that leadership style is the most important enabler/inhibitor to alignment. Could you describe why.

In our earlier interview you also mentioned culture in tandem with leadership style. How does culture act as either an enabler or inhibitor to alignment?

You've previously mentioned the importance of relationships in alignment.

What are you attempting to achieve when forming a relationship?

How do they affect alignment?

Do you target specific people?

What do you do if a relationship with a targeted person is not working?

What helps or hinders the development of relationships between CIOs and senior management?

Are these relationships important at lower levels of the organization?

Why?

What are the 3 most important enablers of alignment?

What are the 3 most important inhibitors to alignment?

Appendix C: Sample Transcript:

T1, Second Interview, 11th October, 2004

The interview with T1 was transcribed into a Word document. This was then imported into NVivo in .rtf format. The document text report, below, was then generated within NVivo from this file. NVivo appends both administrative data as well as paragraph numbers. Note that the identifier “D1” was that originally used for T1.

The markers shown as `[[[1]]` indicate that a memo was written and linked to this document at that point. The number identifies the memo. These memos are shown at Appendix E.

The following Appendix (D) consists of a node report from NVivo. It includes sections of this transcript that were coded to that node. The node report also contains paragraph numbers. During analysis all examples of nodes were related back to the transcript using these paragraph numbers. This, then, ensured that context would not be lost when considering various nodes and codes within the node reports.

NVivo revision 2.0.161

Licensee: Bruce Campbell

Project: Alignment1

User: Administrator Date: 14/09/2007 - 3:23:09 PM

DOCUMENT TEXT REPORT

Document: T1 Second Interview 11 October 2004

Created: 24/12/2004 - 8:24:38 AM

Modified: 15/03/2006 - 10:12:19 AM

Description:

T1 Second Interview 11 October 2004

1: D1 Second Interview 11 October 2004

2:

3: F. Do you want to go on further on what you were saying before I get into this list of questions? [referring to informal conversation before recorder turned on]

4: D1. Sure. I think that one of the key realizations for me was the fact that, as I was saying to you earlier, a lot of the issues that come around strategic planning are actually around leadership issues. And its... they have their roots in a bigger problem. Its not just that the CIO doesn't work well with the CFO or HR director, but often the case that the executive team don't have a common view and a common look forward. And I guess maybe that is what strategic planning is about, anyway. One might be a symptom of the other. They can't agree on anything so then it is very hard then to document an agreement because you can't get agreement in the first place.

5: F. So what do you think is actually leading to that situation?

6: D1. What causes that?

7: F. Yes.

8: D1. I think... maybe one of the issues is that people who are in those senior roles within a functional area to a large extent from their success in their functional area and for whatever reason that sort of blindsides them from being able to take someone else's perspective. So, an HR director might not be able to see why their input it crucially important to an information systems plan and vice versa. I think in my experience the CIO tends to be in the most awkward position because... the one with the highest expectations. They're the one whose expected to understand the financial issues, understand the marketing issues, understand the people issues whereas many of the other functional areas feel that there's not so much pressure on them to understand IT or anyone else's functional expertise.

- 9: F. So what you're saying is the IT manager is expected to have understanding of all the other functional areas but that's not the case...
- 10: D1. There's no reciprocal expectation. So you can quite easily be sitting down with the CFO and they expect you to be able to read a balance sheet, and so you should be able to if you're going to be an executive, but there's no expectation that a CFO should be able to read a project plan. Which is almost... to my mind it's the equivalent document for the IT professional compared to a balance sheet for a CFO.
- 11: F. I think you've actually mentioned that in the previous interview. You were also mentioning before I turned the recorder on the relationship between the CIO and the HR director.
- 12: D1. Yes. And I think that comes back to my comment about leadership is that most of where the CIO, forgetting about the rest of the IT function but talking about the CIO's role specifically, most of their handbrakes, their barriers to performance are in the people issues albeit leadership of their own team to get the team to perform at maximum, or interacting with other people to get results because its always about how different groups work together and all these tend to be perceived, at least, as HR issues. And consequently CIOs might have a better time of it if they were able to recruit? convert? I don't know what the term is but gain the assistance active participation and assistance of those functions that are normally in the domain of the HR manager or organization effectiveness manager or whatever within the organization.
- 13: F. But, it seems to me that you're actually talking about 2 different issues there. One is the ability of the CIO to effect change, and the other one is the ability of the CIO to actually get along with people.
- 14: D1. Yes, I guess I wasn't really thinking about the getting along aspect. I was thinking in terms of its effect on the organization so the getting things done. Getting things done is always getting things done through people whether its your own people or other people within the organization or people outside the organization. Its always getting it done through people. And different organizations, different people have different ways of deciding and doing and from

the research paper, Earl's paper, [Earl 1993 on SISP approaches] here's one suggestion that a certain way of thinking, deciding and doing is more likely to produce results than other ways of thinking, deciding and doing. As has been seen from my experience, you don't get those choices, you often don't get those choices. But you can bring those choices into an organization but that means changing the way people behave. It was from that angle where I said if you want to move to more effective way of deciding and doing you have to change people's behaviour, that's the underlying thing. In achieving change in people's behaviours, the CIO could use the HR director as an ally. You will probably find, that of all the other executives the one [HR director] who will find it most easy to understand the fact that its behavioural issues that are the barriers to organizational effectiveness. And even if you might only be narrowing your issue around effectiveness to how do you do IT strategic planning, its still the same problem. You can't use a blended model like the organizational model [an approach to SISP identified by Earl 1993] if people won't work together. If everyone insists on sitting in their ivory tower and making their decisions within their control and ignoring everyone else then a collaborative model doesn't work.

- 15: F. Is what you're saying is that alignment to a large extent is about effecting changes in people's behaviours?
- 16: D1. Improving alignment almost always involves changing behaviours. Yes! [1]
- 17: My existing model of 18/10/04 does not explicitly include a change management or behaviour change variable. What D1 appears to be saying here is that by developing relationships he is attempting to change the behaviour and world views of other executives (I also know this from other informal conversations I've had with him.) But, this also seems to be true for other people I've interviewed eg B1. At a macro level, it appears that the developing of relationships affects the perceived role of IT. This is, in effect, changing the world views and behaviours of executives and employees in other functional areas. It is also affecting the shared domain knowledge of all actors, which in turn probably has an affect on behaviours.

- 18: F. OK. Great! Now we can probably go onto some of my set questions. I have 2 questions I was going to ask last but I'm going to ask them first so that we don't muddy the water too much. They are questions I should have asked you [in first interview] before but didn't. The first of those is: What do you think are the 3 most important enablers to alignment?
- 19: D1. I find it hard to go past one, which is effective communication. But that's a very broad term in itself, so maybe there are 3 subsets of that. The first one, and we talked about over lunch a bit, is understanding. In any sort of communication for it to be effective you've got to understand how its seen by the person receiving the communication. So, its not just a throw it over the fence type of issue. It's a case of, I'll pass it to you, see what you do with it and catch it back and see what it looks like when I get it back and see if that was some approximation of what I hoped for. And when its not, which often it won't be, then I'll learn and change the way I deliver my message, maybe. Some people you use pictures, some you use words sort of thing. Its an active communication thing.
- 20: Secondly, a lot of alignment issues come from the fact that the message is way too complex. The simpler the message the easier it is for that message to get across. Also the more concrete it is. Not just simple, but simple concrete. And, as we talked about at lunch, the third aspect of that is that you can see the result of it fairly quickly. [2] I see them all as dimensions of communication so its keep the message simple, put it in terms of the person who is going to receive it but talk about things they can actually perceive directly and its not just some far distant future. And all those sorts of things forma feedback loop which helps the alignment process. And they help it... I think if you think of alignment as a learning process. Its not something that is aligned or misaligned. Its convergence that can happen over time and it could be a period of years. And it requires that you are heading in roughly the right direction but also for there to be frequent refinements of that direction.
- 21: F. When you're communicating with people, what is it that you are actually trying to achieve? You've mentioned a couple of things, but what is it that you are

actually trying to achieve when communicating and developing relationships with people?

- 22: D1. Well, that is interesting because not everybody is after the same thing when they communicate. My natural style when I communicate is that I try to... ultimately what I'm working towards is a shared agreement on how we're going to go forward. So, there's some goal on the horizon that is more or less defined and you trying to make it more defined so that we can both move towards it. Agree that we want to go towards it, and start going towards it. Not everybody has that I discovered, not everybody sees the world and sees communication that way. Some people the communications are around making each other feel good and the result is secondary. And if you're not aware that that other person's in that communication style, and you're forever wanting to talk about the doing things and they're forever wanting to talk about feeling things, you will find it very difficult to come to any agreement on anything.
- 23: F. When you're talking about you trying to come to some sort of agreement on goals etc, was that trying to make those goals concrete?
- 24: D1. Concrete enough to make, to know whether you're heading left or right. As a stepwise approach to the result, not as a definite stake in the sand.
- 25: F. I'm going to ask this question although you've partially answered it. How does the forming of these relationships and the communicating actually affect alignment?
- 26: D1. Without having the relationships in place you've sort of got nothing to fall back on when the communication hits a problem. [3] So, it's a bit like... I'm trying to think of an analogy but I can't think of one at the moment. It's almost guaranteed that in any series of communications there will be some misunderstandings. There's no perfect form of communication. So the issue is how do you deal with that, how do you prepare the ground for that. And the advantage of, if you've got a working relationship in place then you've got a context to say 'well that person has done something or said something or whatever that I don't agree with, or it doesn't make any sense to me or just seems completely off the planet. In the context of a strong working relationship you can then say to yourself,

well maybe I misunderstood or maybe something has changed. In the absence of that it's a case of what's this person's gain now? So it provides a fallback position to start again to rebuild the communication from. If you've got some sort of... it's a trust thing, it's a trust thing! That's what the relationship is about. Its building trust to a point where when you hit a road block in the communication you've got something to come back from to rebuild that from. [4]

27: F. Lots of people, including yourself, have been telling me that the development of the relationships and the communication is vital for the development of alignment, but how?

28: D1. How is it vital?

29: F. Yes. How does it help alignment?

30: D1. I'll give you some concrete examples from within my own team. In this organization I had 6 direct reports. Each one of those direct reports was managing a team. In some cases it was half a dozen, and up to 20 so it was a fair variety in size. Some people were in operational roles, some in development roles some were in project office type roles. I had a matrix responsibility across the organization. Quite a variety. Where the relationships helped in the alignment was first of all because of a good working relationship that had developed over time, my managers knew that if they had a problem they could bring it to me and not get slapped around. In fact they also knew that if they had a problem and didn't bring it to me that's what would attract getting slapped around. So its that relationships kept the channel of communication open for when there was a problem. So its not that something goes down railroad tracks and never come off the path, things always come off the path. Its about how quickly and how accurately you get feedback of what's really happening. To be able to do that is what I see as the main contributor to alignment.

31: F. Do you think, taking it from your role as a CIO, do you think it is important in developing shared knowledge of other functional areas?

32: D1. Yes. I don't limit that issue to IT at all. In IT you're trying to effect change within an environment. The environment you're actually trying to change is the

business, its not IT. IT is an enabler to getting things done. It just happens to be a very useful tool if used appropriately. It can be a bloody expensive and bloody useless tool if used inappropriately. It's a bit like fire in that respect. You might think of the inventor of IT having something akin to the inventor of fire. Well, the person who tried to tame it! You can imagine someone running around with a burning stick saying 'I've got fire' and then 'aaahhh!' So you can't do it in isolation. There might be some company somewhere in the world where certain parts of IT can be done completely in isolation from what's going on in the business. I have never seen that one, but its possible. So, it still comes back to having information about what's really going on, and having information in a timely enough fashion to be able to make reasonably intelligent decisions to alter the course of events. And that comes from not just knowing what's going on in the IT dept but knowing what's going on in the broader business and even outside the business. And the real information doesn't come through formal channels. It never does!

33: F. When you're forming these relationships with other business managers are you also trying to educate them at the same time?

34: D1. Yes. What you try to do is give them enough... its almost like trying to teach them a foreign language, but they can understand some of the things you want to talk about because they don't have terms in their language for the concepts you want to express. A big case in point was the use of the term 'process' which I thought was a pretty obvious sort of term to use which... everyone can look up a dictionary to find out what process means. A sequence of steps towards an outcome. And everyone can agree that makes sense and they don't need any special training to understand that. But the concept that that term has applicability to someone who is trying to edit a book is a foreign concept for an editor who has never worked in that environment. And what's more, and this was something I tripped over, was that the main barrier to them understanding the concept, because intellectually its pretty straightforward, the main barrier is that emotionally describing what they do as a process to them was turning them into production line worker when they saw themselves as a creative person. So, its barriers like that where you hit communication issues where the language thing comes in and where

you might look at what they do and say, 'well, I can break this up into its elements and 90% of those elements...' What you [referring to an editor] are is a knowledge worker. You have certain pieces of information and some understanding and you recombine those pieces of information to get an output. And in its in broadest sense that is identical to what a claims processor in an insurance company does. They get pieces of paper on their desk, they read it, they get information, they have some knowledge and they apply the information intelligently to the piece of paper they have in their hand and they produce new pieces of paper. And so at that abstract level they are identical processes and the same tools that were used to improve the efficiency in an insurance claims processing environment could be used in an editorial environment. To me it was just so obvious as not even worthy of talking about. But to the individuals involved, they're nothing like an insurance claims processor they're just an office worker. We're creating new stuff here. This is... So, yeah, it comes down to communication once again and perspectives.

35: F. The three most important enablers of alignment. You've got communication...

36: D1. Yes.

37: F. I'm going to ask another question and then we'll come back to that.

38: D1. Yes.

39: F. What happens if there is an IT manager at either a CIO level or at lower levels, who is unable to form those relationships and communicate and have you come across that sort of a situation?

40: D1. I've encountered that situation many times, actually, in various forms. Some symptoms of that are... its often difficult to see much good coming out of what's going into the IT space. And that is not necessarily because the IT department is being ineffective although that can be a symptom, but what the IT is delivering versus what the business wants, maybe not what it needs but what it wants, is very hard to see a link between the two. Typically the way that resolves itself is that the CIO goes. Either gets pushed out or gets so fed up with working there that they leave. Because ultimately its not a very pleasant environment to be in where you can't agree on what needs to be done. And it comes down to personality styles

again. Some people are quite comfortable with staying in an organization and not delivering on anything of particular import as long as they've still got their job. And so they will stay in that environment even in the absence of alignment, communication. Sometimes even when their entire team is on the verge of rebelling against them, they will still stay because what they value is security. Other people whose values may be around wanting to build something useful or important or lasting, they won't stay very long at all. They will either go or they will create a situation in which case they will get rejected by the senior organization and they will have to go.

41: F. So that inability to form relationships and communicate could be either through the personality of the person involved or the culture of the organization?

42: D1. Yes with one exception. A clarification on that. To my mind the culture of the organization is a pretty amorphous thing, a pretty nebulous thing. It's actually the culture of the people. An organization only has a culture in a statistical sense, to my mind. It doesn't have a culture per se. So when you're talking about the relationships its relationships within the decision group, if you like. So, the CIO, the MD and the CFO and the HR director or whatever. In fact, as far as I've ever seen it's the sum of the, or the collision of the personalities in that decision making body that is what determines the culture of the organization, sooner or later anyway.

43: F. Again, still looking at this communication and relationship area, do you think its necessary for those... whether its important for those relationships and communications to occur at various levels of the organization, not just at the CIO level.

44: D1. Definitely. Certainly as a CIO you rely on that. You rely on the fact that the rest of your team is in contact with the rest of the organization.

45: F. Because we did talk about this before and you related it to communication and relationships within the IT group and now I'm asking about across functional areas.

46: D1. Yes. I guess what I'm saying is that in a lot of instances, and in particular I'm thinking of a situation where the communication at the decision making level wasn't functioning correctly. As a CIO it was alignment within my team and my team's connection into the rest of the organization was actually the only thing that was keeping it working. So, although it wasn't easy to establish rapport at the senior levels you could actually find out what was really going on within the business and what the business actually needed much more effectively because the alignment was going down and through and out through. And in any event its... a lot of people think of organizations as like a pyramid, a hierarchy type arrangement when in fact it more like, if its functioning well, its more like a web. And one of the advantages of a web over a hierarchy is that it is a lot more resilient to failures. So even if communication fails at one point, there's other ways for things to get around, through and over. Its not quite as efficient as a hierarchy in the best possible case, but it tends to work quite well even in difficult circumstances. And whereas a hierarchy, if everything is perfect it works really well but if something is not quite perfect it works really badly. [5] So its more tolerant from being away from perfection. It holds its own for a lot longer and in my mind that's a helluva better place to be because people aren't perfect. And even if they are perfect, they're not perfect for long.

47: F. So, going back to our enablers, we've got to communication and various aspects of communication anything else?

48: D1. There are advantages to having processes in place. I'm not a big fan of formal planning methods because I have a feeling that people tend to hide behind the formal planning method and use that as an excuse for not taking responsibility for the outcome. But, having some basic processes in place is an aide. But I see it as an aide in communication so we've got something, we know we're going to work through this basic process and it's a pretty simple and straight forward process that we all understand and agreed, it's a whole raft of questions we don't have to ask and answer because we've already got that. So it let's us sort of get to the core issue. And to what extent they are I almost don't think that what the really process is actually matters. Its an advantage to have a simple process but it doesn't matter too much what it is. As long as we're OK with it.

49: Pause laughter.

50: F. I'm putting the pressure on you.

51: D1. Its like pulling teeth.

52: F. And if you don't want to go beyond that...

53: D1. No. Its interesting thinking about it because once again it comes down to personal style. Some people are a lot more comfortable with structure and process and formality, some people are a lot less comfortable with that and a lot more comfortable with 'let's go out and hack a track through the bush today, because we are going to go through this bush today.' And I'm not too worried about who's going to come next behind me because they're going to have a whole different... the whole world is going to change by then anyway. Whereas some people like to carefully lay down a path so that everyone can follow that path every day for the rest of their lives.

54: F. So that when you're talking about that sort of issue you're talking about it from the CEO's, MD's perspective?

55: D1. Sometimes from the CIO. I know CIO's who feel uncomfortable with anything other than a formal planning method.

56: F. From your experience were the CIO's like that also good relationship builders and communicators, or is there a connection there?

57: D1. I'm trying to think of a situation where there was a CEO who was keen on the formality and who was also a good people person, and I can't think of one.

58: F. What about from a CIO...

59: D1. Similar situation. My experience of people who are really strong on the formality is that they also think that the process can replace the relationship. An interesting comment by another CIO whom I've worked with was basically saying just that. Its all about the process in the org and the structure and it doesn't matter about the people. Its almost the cog in the wheel method of making things happen. You should be able to pick up one person and put another person into the same role and same job description and the same the process and it should happen the same.

And my experience in management, and being a person, over the last many years is that it ain't like that. It never was like that and it was only ever, you can only ever force it to behave a bit like that and you can only do it basically by a series of sanctions.

60: F. Do you think you can get to achieving a reasonable level of alignment that way?

61: D1. Well, you have to start to think about what alignment means in that context. Because what you can probably get to happen is that you can get people to follow the letter of the law. So, is that alignment? [6] I don't know. Because it's a sort of fundamental thing. If we lay down the law and everyone follows the law, that's a good thing. And it's a very autocratic approach to the world and a very arrogant approach to the world. 'I, from my ivory tower, with my telescope can pick out on the horizon exactly where we are meant to be, and what I'm going to shout down to you is compass bearings and distances. And if you follow the compass bearings and the distances you will wind up where I said you needed to be.' Not even the army thinks that any more! [7]

62: Note: this is a third coping strategy! Reliance on formality, structure and formal methods.

63:

64: F. But that is the prescription that so many of the papers on alignment actually advocate.

65: D1. Yes. And I don't think it works. The interesting thing is, from my understanding of the modern command structures in the armed forces - and you would expect them to be the home of the hierarchy and "you will follow the orders" they don't even operate like that anymore because they know that when they send somebody over to that location which they thought was good place to go, when they get there they are going to find this huge hole in the ground. And they are going to have to make a decision about how to get around that hole in the ground. And from your telescope you can't see the hole in the ground. You align them to have a better idea of what they're after and figuring it out on the spot. [8]

And this is a pretty fundamental thing about... and it all comes back to leadership. It's a pretty fundamental thing about leadership. How are you going to treat the people. What do you think of your people? And what do you expect of your people? Do you expect them to be robot? Here's 3 laws. Follow the 3 laws to their disastrous conclusion as happened in the movie (nothing like the book!), or do you see them as making sensible choices, sometimes inaccurate, but sensible choices and learning from the experience as they go. And my experience has been that when you put two teams side by side operating on those 2 different modes the contrast is stark and its so stark you wonder why people still do the old hierarchy stuff. But they do. And its like Earl's model [Earl 1993] you line up the different ways of doing SISP and you say 'OK, here's the characteristics of the 5 models, which one would you pick' and the differences are so stark its almost 'why do we need to talk about this anymore?' We do because even though the differences are very real, real enough for people to feel them its not how people operate.

66: F. thinking. OK, I'll leave that one. The flip side of the major question I asked you was what are the 3 most important inhibitors to alignment.

67: D1. Well, they're the flip-side answers to the enablers. I think the biggest barrier to achieving alignment comes down to how you value, and how do you approach the people involved in the process. And its almost... my experience has been that the legislative approach to alignment the law, follow the lay gives rise to, first of all there's no visibility back. Its all one directional. And secondly even when people have the good intention of following the law they may find reasons why they can't follow the law but the people setting the law don't see the problem as being the law, they see the problem as being the law-breaker. And so you get rise to institutions like police and gaols and you have their analogues in an IT dept. You have in that sort of an organization, that's where the project officers sometimes start to come in, and quality systems, all these things. And people who follow the rules and projects fail and people who don't follow the rules and projects - fail they get treated differently. All the organization really cares about is did the project succeed or fail? So I still think the biggest barrier to getting alignment and to my mind alignment is about being able to actually deal with the reality of the situation right through the organization from the people doing, to the

people designing almost using hierarchical terms to describe something that is a lot more fluid than that. I think the biggest barrier is still how do you see people fitting into that process? What is the role of the person in that process? Are they an independent decision maker dealing with the various influences in front of them, some of which will be what you've told them, some of which is what they're discovering? Or do you see them as a cog in a machine? And I don't think the cog in the machine approach works. I can't think of an example of the cog in the machine approach where what was actually going on at the grass roots bore any relationship at all to what the person who had the telescope thought what was happening. And that's sort of the dichotomy. Whereas if you subscribe to the more fluid open ended approach you don't have as much control of what's actually going on but in my mind that control was only ever an illusion anyway. So what you've got is more knowledge of what's actually going on. The small amount of control that you actually have can be applied more effectively.

68: F. One of the arguments that I've seen is that if you have the more planned approach, the legislative approach as you call it, you are likely to achieve long term alignment, whereas if you have the more fluid approach you are more likely to achieve short term alignment. Do you think that is a fair argument?

69: D1. That might be the case, but I guess I would have to be asking the question 'alignment to what?' So, if you're saying alignment to the law so if you used the planning approach and you lay down the law over time more people will follow the law than not, then its probably the case. But the question then becomes 'how does the law get changed?' And who's informing the process on where the law needs to be changed? And that's the flaw. There's alignment between actions and the law, but you've also got to take into account the other piece which is alignment between the law and reality. And I think if you broaden your alignment to cover both ends of that, the more fluid approach actually has better long term alignment. So, yeah, you can get people following the law but the law is a dumb-arse thing that you're doing, so why are we doing it? In the hierarchical approach that sometimes a very hard message to get back up to the people setting the laws.

70: F. Do you still want to go ahead and try and find another couple of inhibitors to alignment? If not, the basic question I've got here is 'do you have any other comments on this area that you want to raise?'

71: D1. I think my thoughts and my perceptions on what works and what doesn't work in a practical sense in organizations is really, really bound up in views on leadership style. And to me, it is sometimes really hard to talk about them as separate things.

72: F. So, what types of leaderships styles are you talking about, and what are the affects of each of those?

73: D1. Well, see my natural leadership style is not to give too many people too much detail, but to set broad objectives and then assure that we agree on what the broader objectives are and then leave it with them to paint in the detail in the piece that they've been handed. And to allow them to come back and say, well maybe that doesn't fit into the overall picture. Its like it becomes a blending issue as opposed to here's the cookie cutter, or here's the map. So that's my natural style of working so that's maybe why, for me, formal approaches vs informal flexible approach, I will always go to the less formal more flexible approach because that is where I naturally go and that is why I see that one working better. It works better for me!

74: Note that D1 is cognizant of his world view here. He is describing either a self-fulfilling prophecy or selective perception: He prefers an informal approach so sees them succeeding but may not see them failing. The opposite is also true: he sees formal approaches failing but may not see their successes.

75: F. You mentioned earlier on that one of the problems in this whole area is that a lot of objectives aren't concrete they're abstract. And you're just saying here that you prefer to give people objectives and let them work towards it. Aren't you falling into the same...

76: D1. It is a trap you can sometimes fall into, but there is a slight distinction between abstract and concrete vs broad and narrow. So saying, what we want is X, Y & Z within this time frame, working out how to get there as opposed to saying 'wouldn't it be lovely if we all worked together better?' So, I like to see

communication flowing faster between what I say to you and the changes happening in your team. I like to be able to see that happening in a one week period as opposed to saying 'I'm not going to tell you how to do that. We can talk about it, but I'm not going to tell you what you need to do' as opposed to saying 'we need to speed up communication.' So its concrete description, but only setting down the.. drawing the fence, but not saying how the grass is going to be mowed inside that fence as opposed to saying 'Oh there's some grass over there that needs to be mowed.' There is a bit of a difference.

77: F. You've also mentioned once before that if you felt that the leadership style of the MD or CEO is important. How does that effect... again, can different leadership styles be connected to any issues with alignment?

78: D1. I'm pretty confident that I've worked under most leadership styles that there are. One MD I'm thinking of was very survival oriented. Now, the company he was heading at that time that he took over was in a lot of trouble financially. So having the survival focus at that point in time was a very realistic approach to the world. The company was close to being closed down by its creditors. His style was very 'I'll tell you what to do. You just do what I need you to do. Come back to me when its done. Don't tell me what your problems are, just find a way of getting it done.' Now, within the context of the organization being in a lot of difficulty and him having experience in turning those sorts of organizations around that leaderships style right there and right then was a good match for the organization. I wasn't in the CIO role then, I was in a senior IT manager role, you just got on and did what you needed to do, and you just told people what needed to be done and they did it. A little later on as the organization was coming out of its problems, the bank balance was now healthy, we've got some new products to market, everybody was excited and everyone was looking towards the future but the MD was still in the 'batten down the hatches' mode because that is the only style he's got. You now want to talk about creating the future and working together and so on and still giving orders and its no longer an appropriate leadership style for the state the organization's in. And what happens is that you still head down these narrow tracks and as information about corners coming up that he's ignoring because it doesn't fit in with his view of the world. So in that instance its like... and its this

alignment thing where information is all going one way, the feedback is not coming back. So when the road turns you just go straight off the edge. And that is what happened with that organization. They actually blew the chance to turn it into something. They got it out of the problems and ended up selling it and not going bankrupt, but they blew the opportunity to do something quite significant by failing to turn that corner when the environment changed.

79: F. Again, going back to leadership style, do you think the concentration on being consistent with a message is important? And supporting that objective and the message.

80: D. There's different sorts of consistency. So, there's consistency between what you say and what you do. That's absolutely crucial.

81: Note the anomaly here. A number of participants, including D1, have told me that there is often inconsistency between words and actions around goals and strategies especially where these are formally planned.

82: So if I tell you that this is a collaborative environment and my door is open, and when you walk in the door and I slap you around 'why are you bothering me. It's a waste of my time!' That's an example of inconsistent message and that will piss people right off straight away. And in fact in that sort of circumstance you are worse off by telling them that you want to collaborate when you are going to be dictatorial and just by being dictatorial. There's nothing pisses people off more than being lied to.

83: There's consistency over time, however, in 'well this is the direction we're heading and now that's changed, and here's why it's changed.' People are a little more open to that sort of thing. OK, well I can understand why the world has changed. Or, maybe I don't understand why the world has changed but I can understand that we are changing. It's still not an easy thing to do as most people prefer that there's not that many changes but the consistency between saying and doing is the crucial one in terms of alignment.

84: F. So, what you're intimating there is that the objectives and strategies that are being followed should be reasonably consistent. In other words there can be an overall change at some stage, but you can't be chopping and changing all the time.

85: D1. Its hard for people to keep up. But over time it means different things in different organizations are wrong. In a start-up company, for example an IT start-up company, changes in direction every few months is sort of par for the course. In a hundred year old leather bound book publishing company, changing strategy every 10 years is probably a bit too fast. So, there's not a one time scale fits everyone. But there's another aspect of consistency in the strategic message and that is its internal consistency. On one hand saying that 'on-line is the future for our market, but all the new product development is going into books' is an example of inconsistency in the strategic message.

86: Equate this to the situation described in the first focus group where an organization was still placing all its development into its accounting products where it totally dominated the market rather than into its legal products where there is room for expansion.

87: People sit there and say 'what sort of bull-shit is this?' because we're being told this, but we're doing that. Its another one of saying if the action doesn't match the message, people will trust the action and they doubt the message.

88: F. And you think that's tied up with leadership style?

89: D1. Yes. But sometimes its actually a communication type of things. 'We believe this is the way of the future, but because of the pipeline effect of the new product development, for the next 6 12 months there's still going to be lots and lots of this sort of stuff coming out while we turn the ship around.' And then in 6 months time that balance will start to shift, and in 12 months time it will be all the way over here. Because it's a big ship and it takes a long time to turn. (That might have been) matching the action of what people see to what people hear might have been all that was missing. It might just have been a communication thing. The fact that that might have been what happened has only just occurred to me now. This is 4 years after the fact! And I sat there. I'm thinking of one particular session at a corporate quarterly session when they got up and told us what the new corporate

plan for the next 12 months was going to be and they said all of these things and I went back to the office and had a look and saw what was actually coming out and thought ‘what’s going on here?’

90: F. OK. Do you have any other comments?

91: D1. Nothing that comes to mind at the moment.

92: F. Good. We’ve covered everything I wanted to talk about and filled in a few blanks that I had from before, which is great. In that case I’ll turn this thing off [the recorder].

93: FINISH

Appendix D: Sample Node Report

This is a report generated from NVivo showing all instances of coding to the node “Relationship Reasons”.

Note that each instance includes the document name and the paragraph number. During analysis each instance was related back to the transcript document to maintain context. Similarly, when coding the surrounding text, and even paragraph, was often included within the node to maintain context.

Document 'D1 Second Interview 11 October 2004', 11 passages, 4552 characters.

(Note: See Appendix C)

Section 0, Paragraph 12, 325 characters.

And consequently CIOs might have a better time of it if they were able to recruit? convert? I don't know what the term is but gain the assistance active participation and assistance of those functions that are normally in the domain of the HR manager or organization effectiveness manager or whatever within the organization.

Section 0, Paragraph 14, 211 characters.

Getting things done is always getting things done through people whether its your own people or other people within the organization or people outside the organization. Its always getting it done through people.

Section 0, Paragraph 14, 357 characters.

But you can bring those choices into an organization but that means changing the way people behave. It was from that angle where I said if you want to move to more effective way of deciding and doing you have to change people's behaviour, that's the

underlying thing. In achieving change in people's behaviours, the CIO could use the HR director as an ally.

Section 0, Paragraph 14, 211 characters.

You will probably find, that of all the other executives the one [HR director] who will find it most easy to understand the fact that its behavioural issues that are the barriers to organizational effectiveness.

Section 0, Paragraph 22, 244 characters.

D1. Well, that is interesting because not everybody is after the same thing when they communicate. My natural style when I communicate is that I try to... ultimately what I'm working towards is a shared agreement on how we're going to go forward.

Section 0, Paragraph 22, 405 characters.

So, there's some goal on the horizon that is more or less defined and you trying to make it more defined so that we can both move towards it. Agree that we want to go towards it, and start going towards it. Not everybody has that I discovered, not everybody sees the world and sees communication that way. Some people the communications are around making each other feel good and the result is secondary.

Section 0, Paragraphs 25-26, 220 characters.

How does the forming of these relationships and the communicating actually affect alignment?

D1. Without having the relationships in place you've sort of got nothing to fall back on when the communication hits a problem.

Section 0, Paragraph 26, 1032 characters.

Its almost guaranteed that in any series of communications there will be some misunderstandings. There's no perfect form of communication. So the issue is how do you deal with that, how do you prepare the ground for that. And the advantage of, if you've got a working relationship in place then you've got a context to say 'well that person has done something or said something or whatever that I don't agree with, or it doesn't make any sense to me or just seems completely off the planet. In the context of a strong working relationship you can then say to yourself, well maybe I misunderstood or maybe something has changed. In the absence of that it's a case of what's this person's gain now? So it provides a fallback position to start again to rebuild the communication from. If you've got some sort of... it's a trust thing, it's a trust thing! That's what the relationship is about. Its building trust to a point where when you hit a road block in the communication you've got something to come back from to rebuild that from.

Section 0, Paragraph 30, 726 characters.

Where the relationships helped in the alignment was first of all because of a good working relationship that had developed over time, my managers knew that if they had a problem they could bring it to me and not get slapped around. In fact they also knew that if they had a problem and didn't bring it to me that's what would attract getting slapped around. So its that relationships kept the channel of communication open for when there was a problem. So its not that something goes down railroad tracks and never come off the path, things always come off the path. Its about how quickly and how accurately you get feedback of what's really happening. To be able to do that is what I see as the main contributor to alignment.

Section 0, Paragraph 32, 438 characters.

So, it still comes back to having information about what's really going on, and having information in a timely enough fashion to be able to make reasonably intelligent decisions to alter the course of events. And that comes from not just knowing what's going on in the IT dept but knowing what's going on in the broader business and even

outside the business. And the real information doesn't come through formal channels. It never does!

Section 0, Paragraphs 33-34, 383 characters.

F. When you're forming these relationships with other business managers are you also trying to educate them at the same time?

D1. Yes. What you try to do is give them enough... its almost like trying to teach them a foreign language, but they can understand some of the things you want to talk about because they don't have terms in their language for the concepts you want to express.

Document 'D2 Transcript 1 October 2004', 7 passages, 3316 characters.

Section 0, Paragraphs 109-110, 443 characters.

F. The next part of what I'm working towards is that it appears to me is that a tactic that successful IT managers take to reduce that ambiguity is to develop relationships. Can you comment on that one.

D2. Yes. I'm increasingly, as I spend time in the corporate world and the more senior I get, is that the relationships you build with the other executives, your network if you like, is absolutely crucial to you being successful in your job.

Section 0, Paragraphs 111-114, 1330 characters.

F. What are you trying to achieve by establishing those relationships?

D2. I guess its twofold. One is to build credibility and to be able to contact people when you have a problem or need help on something in a non-threatening way. So when you sit down and speak to them they will give you a hearing rather than being defensive and being able to discuss things clearly and openly. I think it's the relationship you build that allows that to happen. You create the credibility and trust for that requirement to happen. And I think that's extremely important. And the other

value in creating those relationships is that if people... again you've got the credibility and people believe you do it, then you get support. So, when you go into a meeting you get support. I've become a great fan of never going into a controversial meeting without having resolved every single question before you actually hold the meeting.

F. But then you wouldn't need the meeting! (laughing)

D2. You still hold the meeting. Its very much a Japanese thing but I have seen it work so many times and in this organization, I'm pleased to say, I'm learning and I've used it very successfully to get some quite difficult and controversial things, that need to be done, done. By using those relationships and speaking to people prior to us having the meeting.

Section 0, Paragraphs 115-116, 341 characters.

F. Do you also use those relationships to gain knowledge and understanding?

D2. Yes, it's a way to find out what other people need and to get their network to see whether we are serving their needs in the way they want. And I'm still effectively a service group to other parts of the business. Its very much about being in contact with them.

Section 0, Paragraph 118, 417 characters.

A number of successive CEO's took a very adversarial approach to management and using divide and conquer as their approach. And it really wasn't till other managers woke up to that and we all agreed that we should huddle together or get slowly slaughtered one by one that there started to be a network. But that excluded the CEO which made for a difficult situation. It means the business is dysfunctional, basically.

Section 0, Paragraph 136, 96 characters.

CEO's and that need help to understand IT for the business and what it can do for the business.

Section 0, Paragraph 136, 260 characters.

The top IT person has a very strong responsibility in assisting the business in seeing what IT can do, and (b) because it is such a complex, technical and changing area that no-one else in the business is able to keep up. They have to be very outgoing with it.

Section 0, Paragraph 140, 429 characters.

But now the challenge is not just to change the IT culture, its to change the CEO's perception which has been built around that culture. So it's a very difficult job and the only way you do that is through networking. Your personal relationships. Your personal credibility you build first and then they can look through with a different, with a more open mind. Because, what you do in a network is break down people's prejudice.

Document 'D1 transcript 4 Mar 2004', 1 passages, 284 characters.

Section 0, Paragraph 137, 284 characters.

whilst having informal relationships may potentially overcome the breakdown between the two formal strategies, if there's an opportunity to catch it, its hard to foresee how having the formal strategies will overcome the breakdown in the IT relationship, the IT-business relationship.

Document 'M1 Transcript 30', 3 passages, 2649 characters.

Section 0, Paragraph 77, 1524 characters.

M1. A more fundamental question, though, is does the business know which direction they want to go, full stop? If the business doesn't know that, that is a big broad question. I'm happy to talk about it, but it depends upon how strategic IT is seen as to whether that is complementary to that, or leading that, or whether its part of that process of defining where it wants to get to. I could argue, or say, that in FMCG and

some of our product sets, we may be at a certain point of a continuum whereas if you're an IBM, or CSC, or Yahoo and your product is technology then the strategy and the involvement of IT may be a little more ingrained. If I take it on the basis of the general of where we're trying to shoot to is achieved, if Kennedy said he wanted to get to the moon, that's the objective. Now lets talk about the strategy of how the heck we're going to get there. An example is, if your objective is to get to the moon. Great objective! And you can measure it have we trod on the moon. Yes/No. But what's the strategy of how to get there. And so they worked up that they would do various stagings. They would go into orbit and then they'd fire to here, then they'd do the loop of the moon and then they'd etc. And then there were projects, plans, schedules, tasks and activities all sitting behind that. But, how do you go about saying 'that's the objective, how do we go about doing it?' I still think you've got to get through this fundamental that says 'what relationship do you have with those businesses?'

Section 0, Paragraphs 78-79, 193 characters.

F. That's what I'm trying to get at. So, what you're saying is that you've got to develop that relationship with the businesses to understand what it is they're trying to achieve.

M1. Correct.

Section 0, Paragraph 115, 932 characters.

But I've got one guy in one business unit whose just an ideas machine 'Oh, we need this, we need this, we need this...' Well come and see me tomorrow morning and I've got to ring his FD tonight and say 'I'm happy to talk to this guy but who's sponsoring this? What's the absolute priority? I want to know what's important to you. I want you to tell me if you've got 10 projects I want you to give me absolutely, what is number 1. And I want you to tell me what is number 10. Because I reckon if I get 1 to 5 done you're not going to worry about 8, 9 and 10.' So, I'm trying to reinforce 'you tell me what's important' and the guys are now picking it up from me. We are now

getting calls every now and then from a business customer ‘Can you just change this report?’ ‘Well, can you send us some details’ ‘Oh no, just do this. I’m too busy’ ‘Well sorry. If you’re too busy - if you don’t respect our time we don’t respect your time.’

Document 'R2 G2 Interview of 20', 2 passages, 1670 characters.

Section 1.1, Paragraph 51, 302 characters.

And they went through all these conversations where the relationships started to grow from that. The integration project then delivered the systems and the products that had been specked out by that unified group. And that’s when things started to get a little more comfortable between business and IT.

Section 1.1, Paragraph 51, 1368 characters.

I think at the same time, or similar time, SG its articles of association were changing. It was becoming a takeover target. Prior to that, the 10 years since SG became a bank its articles of association said that 95% of the account holders had to agree to any merger. So nobody would take it on. But when that 10 years was up it got back to normal, and so the CEO at the time sat down and said ‘We need to have our share price at around \$23 to stop any takeovers.’ And they went through an exercise called Best Bank 12 month deliver. Again, 150 top executives in the bank, including business and IT, were all locked in a room and I was one of them for 3 months to go through idea generation to say how do we actually improve our share price, reduce our operating costs etc. Our exercise again reinforced the capability of IT to further innovation and change for the business guy. Because you were locked in a room you actually had to work together. Each idea was fully costed and I think there was something like 3,500 individual ideas went through that costing team. We knew exactly what the costs were, what the payback was. The executive got together and agreed on 1,000 ideas that were then clustered together in projects and IT delivered those projects. Share price I think went up to \$21 from \$8 to \$21 in a very short period of time as a consequence of that.

Document 'S3 Interview 23 Aug 2004', 2 passages, 1202 characters.

Section 0, Paragraphs 93-94, 749 characters.

F. Right. Earlier interviewees told me that alignment is all about building relationships with business people. Could you comment on that.

S3. My take on that would be developing relationships with business people is a crucial element. How do you know if what you're doing is in the right direction if you don't have these relationships. I wouldn't think it was all about that, though because you have all those relationships, you develop the networks, you develop an understanding of what the business wants, or the strategy that is required, and then you implement in your own role things to do that. I guess if you didn't have the relationship you couldn't be in alignment, because what would you be in alignment with? You wouldn't know anything.

Section 0, Paragraphs 103-104, 453 characters.

F. OK. So its only the role that you're currently in at the moment where you're finding it difficult to form those relationships. So your boss is being given the opportunities to form those relationships.

S3. Yes. And it helped him during implementation because he was the one who implemented the project but it doesn't help me in maintenance and actually now is causing problems for him because he can't move onto the next role because he can't let go.

Document 'Transcription of IT Focus Group 9 Oc', 2 passages, 1023 characters.

Section 1.1.1, Paragraphs 28-30, 628 characters.

A1. I think its also, I think historically, technology has never quite proven itself to be extremely stable. So, business people tend to not embrace it wholeheartedly, and are quite cautious about how they want to align themselves with it. They want it, but will it actually do what they want? Not understanding it, and [IT] not being reliable sort of ... its sort of having a customer relationship? []

B1. Undermines it.

N2. That's why its so important to have that relationship there, and have the trust there, because IT are not going to get things right all the time, and you have to have that level of trust there to see...

Section 1.1.1, Paragraph 101, 395 characters.

A1. I think you're looking at it more from the terms of achievement than looking at it in terms of a relationship. And I think that building a relationship, you can actually work towards a common goal, and that's where I'm coming from. If I can actually demonstrtate to someone what happens in my world, and I can see the perspective of their world, I think it can work both ways. Do you do that?

Appendix E: Samples of Written Memos

The memos below were written whilst coding the second interview with T1 a transcript of which appears in Appendix C. NVivo allows users to attach a memo to an icon, with hyperlink, within the transcript. The document report shown at Appendix C indicates where these memos were inserted in the transcript during analysis.

The identifier “D1” was that originally allocated to T1.

The final memo within this appendix was not written whilst coding. It is an example of many memos written in Word whilst attempting to conceptualise my data.

Memo 1:

My existing model of 18/10/04 does not explicitly include a change management or behaviour change variable. What D1 appears to be saying here is that by developing relationships he is attempting to change the behaviour and world views of other executives (I also know this from other informal conversations I’ve had with him.) But, this also seems to be true for other people I’ve interviewed eg B1. At a macro level, it appears that the developing of relationships affects the perceived role of IT. This is, in effect, changing the world views and behaviours of executives and employees in other functional areas. It is also affecting the shared domain knowledge of all actors, which in turn probably has an affect on behaviours.

Memo 2:

This is an interesting comment. What D1 is saying here is that the results of any decision/action must be visible in the short term. This is the antithesis of strategy development and implementation which by its very nature is long term.

Later in this same interview D1 describes an experience where the strategy was long term but this was not communicated to him. He just saw more of the same - there did not appear to be any commitment by management to the new strategy due to the length of time for any change to become noticeable.

This may be a reason why the literature reports so much short term alignment but very little long term alignment.

Memo 3:

Note that communications and relationships are separate issues. Both are required. The assumption implied here is that you can have communications without relationships but not vice versa.

There can be problems with communications without relationships. The latter assist in improving the former and helping when there is a communication breakdown.

Although not mentioned here, there is an implied assumption that relationships provide the trust that can be called upon when there is a communication breakdown and resulting misunderstanding.

I need to work out how these two are placed within my model. Are they in parallel or are they sequential? That is, do I show them separate or do I show them as one being a condition of the other?

Memo 4:

These few sentences are incredibly important! READ THEM BLOODY CAREFULLY!

You can have communication without relationships. But effective communication, understanding and learning require trust. This is developed via relationships. But you also need communication to develop the relationships and therefore trust.

HYPOTHESIS

Once you have effective communication you can then start to gain understanding and learning. These are pre-requisites to:- shared domain knowledge, collaboration and changing people's worldviews. These latter three are then pre-requisites to long term alignment!

I have evidence to support all of this except the last sentence. This seems to be implied but I haven't noticed it being bluntly stated. Check this out.

Note that there is no guarantee that the above sequence of events stated in the hypothesis will always occur. There could be a breakdown in this sequence at any point. The full sequence can also take a bloody long time to occur.

Memo 5:

There is a need for network redundancy. A hierarchy is very efficient, but if there is a break in communication the whole system fails. If redundancy is built in there is less likelihood of failure.

Memo 6:

This section is questioning the validity of alignment often provided in texts. These texts equate alignment with the development of integrated business and IS plans and then the implementation of those plans. D1 is questioning whether you get alignment this way. Taken to its extreme you probably don't. Its a bit like the 5 definitions of strategy. You don't get a situation where only one method of developing strategy is used without any others.

Memo 7:

D1 has identified another strategy for coping with the uncertainty/ambiguity of conflicting objectives/strategies - using a formal IS planning method and processes and then attempting to implement the resulting strategies.

Note that D1 has already indicated that he is not enamoured of formal planning methods even though he has used most planning approaches in the past. There is a bias here!

I suspect that, like business planning, IS planning should include both formal and emergent strategies to enhance alignment in both the short and long term.

Memo 8:

D1 is now advocating the use of both formal and informal strategy development.

Maybe I will need to adjust my model!

It is not as simple as using the 3 coping strategies that I have so far identified (understanding, ignore business, use of formal structures, processes and planning).

Somewhere in the mess of conflicting business strategies are those that will be followed by various actors. The CIO and IS managers then must decide which, if any, of these strategies that are being implemented they will support. Whether this is done appears to depend on the coping strategy employed. Those who choose to ignore the business will not follow any business strategy. Those who rely on formal methods and structures will tend to choose those in formal plans and then run the risk of serious disagreements with management who may actually be implementing emergent strategies.

On second thoughts, maybe my model is still valid. By employing an understanding strategy CIOs and IT managers are identifying those strategies that are actually being implemented. These business strategies may, or may not, support the business goals. This in turn affects whether alignment is short or long term oriented.

The following is a memo written in Word whilst attempting to conceptualise my data.

Memo – Bounded Choice (30 Jan 05)

Whilst coding the IT Focus Group of 9/8/02 I drew 3 models of the connections between variables. Both the variables and the connections were identified from the interview data.

At one point the participants were discussing what I coded as “Scope Limitation”. At another point they discussed “Functional Isolation/Attitudes.” I made the note on the model that:

“Scope Limitation” in Diagram 2 is a very similar concept to “Functional Isolation/Attitudes” in Diagram 3. They both deal with the bounding of understanding/action to one’s local area.

I had been having severe problems bringing the categories used in my model of 18/10/04 (p. 6) to a higher conceptual level. One of the issues was that I could not think of a term/concept that adequately conveyed what was happening in the “Understanding” box. It was not all about Understanding – some IT managers did not try to understand, they just concentrated on the technology.

I also understood that History of IS/Business Relationships, Organizational Context and Personal Context had an impact on Understanding but the construct just did not adequately capture what was going on. One of the issues that I was aware of was that these codes described simply what the participants were saying. There was little attempt to bring the whole to a higher conceptual level.

A second issue was that I was aware that the choice of action to undertake under “Understanding” is largely due to their personality. But I also knew that this was not the only constraint. This was highlighted by personal conversations with D1 regarding the IS strategy planning approaches identified by Earl (1993). D1 has worked in a number of organizations and has experienced most of these approaches. However, he has said on a number of occasions that you normally don’t have a choice of which approach you can adopt. It is predetermined by a range of factors outside the control of the CIO. I knew that the response available to CIO’s to the Level of Uncertainty was to a large extent predetermined. I already knew how – the data tells me! But, what was the concept?

This concern/uneasy feeling had been present for many months, but I had not seen a way out of it.

Reading my note on the model of 19/1/05 brought it all into focus. The central issue for all these managers, both IS and business, is that their choices are bounded by various factors.

For business managers their response to Environmental Phenomena and Strategic Plans is bounded by the choices they can make. These are effectively severely limited. The end result is a set of implemented strategies that often do not seem to make sense when compared to the documented or official strategies.

Similarly, the responses that IS managers can make when confronted with the resulting confusion surrounding implemented strategies is severely limited and is generally restricted to just 3 responses. This situation is now described:

Bounding of Choices on Strategy Implementation

Most organizations have a set of formal business goals and strategies whether these are documented or not.

But most of these strategies do not mean much to lower level staff. They are abstract and do not identify the actions that individual units/people must take. Strategies that are implemented tend to have certain characteristics:

1. They have meaning for the person enacting the strategy. That is, they must be conceptually simple, easy to relate to and be concrete. Improve customer satisfaction is conceptually complex and is unlikely to be acted upon.
2. They are consistently communicated in such a way that the recipient knows what he/she has to do
3. The results of implementation are easily measured. This relates to the performance of the individual
4. They have short term results. Again, related to individual performance.
5. They do not require changes in individual work habits or changes in long held mental models. That is, if a strategy is not easy to implement it probably won't be.

All of these bound the decisions that will be made when implementing strategies. One result is that the most common implemented strategy appears to be “cut costs”. It is easy to understand, impacts individual performance (measurement), has short term benefits and does not require managers to change the way they work or think about things.

But the business must also react to changes in the environment. The level of market volatility will depend to a large extent on the industry. The higher the level of volatility the more likely that strategies will need to be altered “on the fly”. These types of decisions will be bounded by considerations such as:

- **Leadership Style.** Is a culture of collaboration or competition encouraged? If the latter then decisions will be made to maximize either personal or unit performance with no regard to other units/people. Is the message from the leader consistent or is it volatile? If the latter then it is likely that a stream of decisions won't coalesce into a recognizable strategy.
- **Organizational Structure.** Does it encourage collaboration or isolation? If the latter then it is unlikely that shared domain knowledge and understanding of complex situations will occur. This will then bound the range of decisions that can be made.
- **Measurement Schemes.** These normally emphasize short term personal/unit performance. Decisions can often be made that are detrimental to the organization and its strategies in an effort to maximize performance. A particularly bad example of this was a CEO making decisions to maximize his own remuneration at the expense of the long term viability of the organization.
- **Personality.** This will affect how people communicate, develop relationships and collaborate. This, in turn, affects their ability to gain shared domain knowledge, a shared system of meaning and then an understanding of complex problems. Are they risk taking or risk averse? A person's personality will tend to bound their decision making choices.

Bounding of IS Choices to Cope with Strategic Ambiguity

All of the above normally results in a situation where the enacted strategies don't seem to make sense when considered from the organization's point of view. IS managers, at all levels of the organization, must then respond to this ambiguity and confusion. Their responses, in turn, are bounded by a number of factors:

- 1 **Personality.** This will determine to a large extent whether the IS manager is amenable to developing relationships via communication. This, then, promotes the development of mutual trust, shared domain knowledge, shared system of meaning, collaboration and cross-functional learning. Is the IS manager risk taking or risk averse? If the latter he/she will be more comfortable in a stable environment relying on rules, procedures and formal methods and plans. But the development of communication etc also depends on
- 2 **Organizational Attitude to IS and whether it is seen as simply a service/cost centre or has the ability to create competitive advantage.** The former inhibits communication and encourages the isolation of the IS unit. The attitude to IS is partly dependent on

- 3 Leadership Style (of CEO/Senior Business Unit Manager). What is this person's attitude to IS? If the attitude is that IS can provide advantage then the likelihood is that the CEO will encourage communication, collaboration, shared domain knowledge and cross-functional learning.
- 4 Organizational Structure. Many IS units are physically isolated from their business customers. This limits the ability to communicate and develop relationships etc.
- 5 Measurement Schemes. How is the IS unit and its personnel measured? Most people react to the way they are measured. If emphasis is placed on cost cutting and providing a reliable base service then IS managers will concentrate on the technology and not on the business.

My data leads me to believe that the above are the key variables involved in determining an IS managers response to strategic ambiguity. There may be others.

How IS managers react to the above will determine their response to the strategic ambiguity with which they are faced. There appears to be three basic responses:

- **Technocratic.** This response concentrates on the technology, the software and hardware, and tends to ignore the business and developing relationships with business people. It is unlikely that any alignment will occur with the use of this response.
- **Bureaucratic.** This response relies on adherence to rules, plans, formal methodologies and lines of communication. Collaboration is only possible within these constraints. I suspect that the only alignment that will occur will be with documented business strategies contained within plans. This means that there is a distinct possibility that alignment will occur with strategies that are never implemented by the business.
- **Collaboration** (a.k.a. developing social capital). This response concentrates on reducing strategic ambiguity by learning and understanding. What is going on? What do my business peers want? How can I provide it? This understanding and learning is achieved by developing communication and relationships with targeted business people. This, then, tends to encourage trust, shared domain knowledge, shared system of meaning and collaboration. Emphasis is placed on informal lines of communication by these IS managers. Conversely, they place less emphasis on their technical ability relying on subordinates to supply this. All of my participants, both business and IS, believe that alignment is only truly possible using this response. This is supported by the work of both Reich & Benbasat (1996, 2000), and by Chan (2002). But note my use of the question "What do my business peers want?" What business managers want, as we have seen, may not support the business goals and strategies. The factors bounding their choices come into effect. There is a distinct possibility that IS projects are implemented in a way that maximizes the business unit/managers performance in the short term. A commonly reported phenomenon was that of implementing IS in such a way that it favoured one business unit over

another. This can happen at various levels of an organization. An extreme situation was a CIO reporting that, in a federated organization, he had 5 different sets of IS strategies – one for each of the 5 different business units that made up the federation. A model of the theory is at p. 7.

It would appear that an IS manager's underlying personality will mean that they are more comfortable with one of these responses compared to the others. However, there is no guarantee that this means that they **will** employ that response. It is quite possible that an IS manager who prefers a collaborative response may be forced into either a technocratic or a bureaucratic response. Similarly, an introverted IS manager may be forced into a collaborative response.

However, my data indicates that this situation is unlikely to remain for an extended period. The former manager will probably resign due to frustration whilst the latter will resign due to internal pressure or be sacked for poor performance. Eventually equilibrium will occur – the response dictated by the other factors will encourage the employment of an IS manager comfortable with that response.

I have purposely used the term IS manager and not CIO. Each IS manager within an organization is responding to some form of strategic ambiguity and must choose a coping response. This can mean that IS managers at different levels of an organization are choosing different responses according to the situation in which they find themselves. If they choose a collaboration response it may mean that the strategies being developed at a senior management level are being modified during implementation at lower levels to further short term local interests and what individual business managers want. I also suspect that if either of the other two coping responses are chosen at lower levels of the organization then there is little thought given to alignment.

All of the CIO's I interviewed employed a collaboration response. A hypothesis is that unless they do so they are unlikely to reach that position in most large organizations. They did, however, describe the other two responses and instanced some CIO's that appear to operate quite happily using them. It appears that the other factors noted above made the use of these responses appropriate.

Other observations include, firstly, that the widespread use of either a Technocratic or Bureaucratic response is likely to lead to a so-called "dysfunctional" IS unit. Note that

this situation is as much the making of the business and its attitudes to IS as to the attributes of the IS personnel. A related hypothesis for which I cannot recall any evidence is that this situation will also lead to low IS status.

Secondly, the choices being made create a history which then bounds future choices. Most of the factors are relatively stable meaning that a history of acceptable choices becomes established quite quickly cementing the mental models of participants. This is, in effect, the culture of the organization or the history of Business/IS relationships. This means that the choice of response really is no choice at all – it is dictated by the organizational environment and the mental models of actors.

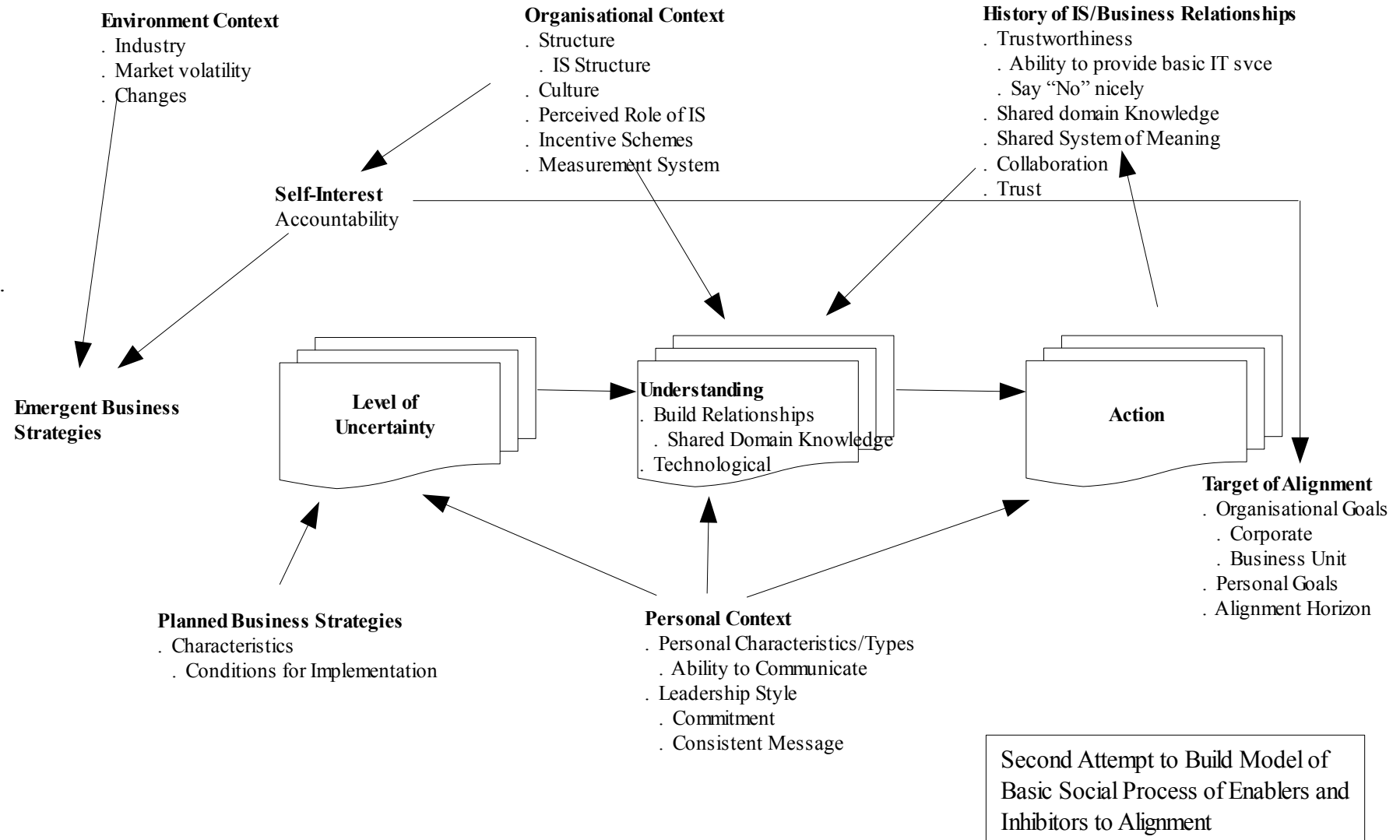
It then becomes very difficult to break out of an established coping response. A new “collaborative” CIO introduced into an organization where a technocratic coping response has traditionally been employed will find it extremely difficult to choose his preferred coping response. One of my participants (business manager) described a situation in his organization where the CIO is attempting to change from a technocratic coping response to a more collaborative response. The business managers only see this in a negative view. Although they all denigrate the currently “dysfunctional” IS team they only see the shortcomings of the CIO’s current attempts to produce something they need. They do not see an opportunity to collaborate and change the situation. I suspect that changing the coping response is only possible during times of crisis or massive upheaval, a hypothesis supported by Sabherwal, Hirschheim & Goles with their punctuated equilibrium model of alignment.

The theory does, however, indicate that some improvements are likely if consideration of these factors is made when making high level policy decisions.

Remarks

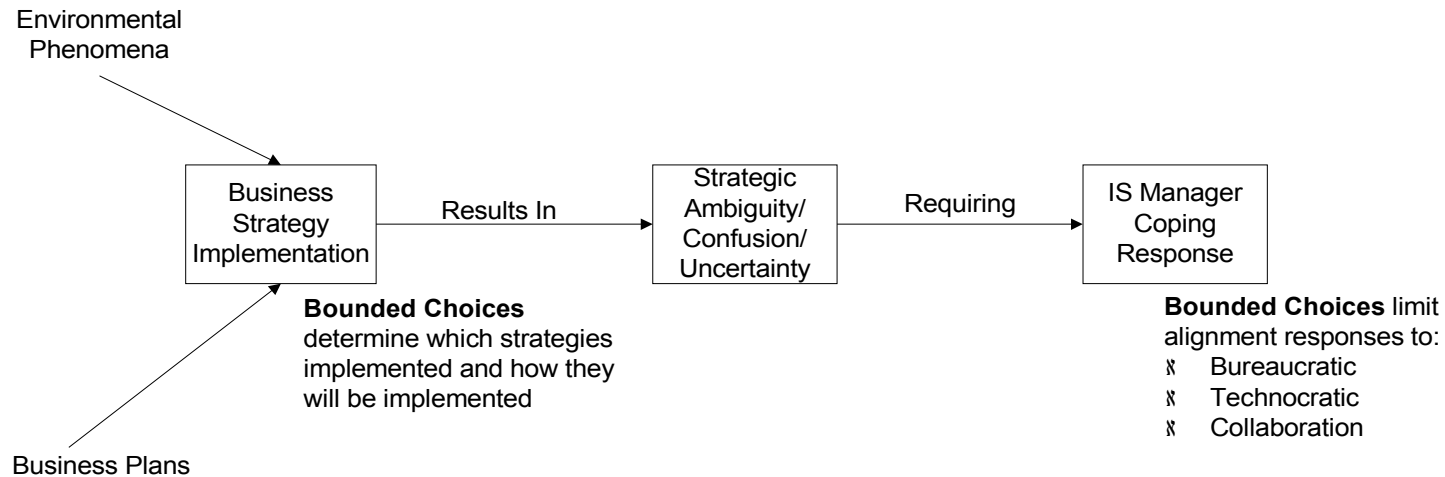
This theory appears to be consistent with all my data. I have not checked it all in detail at this stage but I cannot think of any data that compromises the overall theory. I am not committed to the Key Factors identified here. They may change with further analysis, but my knowledge of my data would indicate that these are pretty close.

The key factors bounding choices, and all their sub-components partly described above, are the enablers and inhibitors to alignment which answers my original research question.



Strategic Alignment: A Process of Bounded Choices

30/1/05



Notes: Coping with strategic ambiguity occurs at all levels of an IS function. Each IT manager within an organization must make a choice of how to respond. This can lead to a situation where the CIO can respond by Collaborating whilst his lower level managers may employ either a Bureaucratic or Technocratic response. This situation often hampers IS strategy implementation.

Widespread use of either a Bureaucratic or Technocratic response can result in a "dysfunctional" IS unit.

A Collaboration response at lower levels of the organization can lead to IS implementation that maximizes the measurement of business managers/units rather than supporting the strategies and goals of the organization.

Key Factors (Hypothesis):

- ⌘ Attitude to I.S.
- ⌘ Leadership Style
- ⌘ Personality
- ⌘ Organizational Structure
- ⌘ Measurement Schemes
- ⌘ Environment Volatility

Bureaucratic: Adherence to rules, plans, formal methodologies, formal lines of communication. Collaboration is only possible within these boundaries.

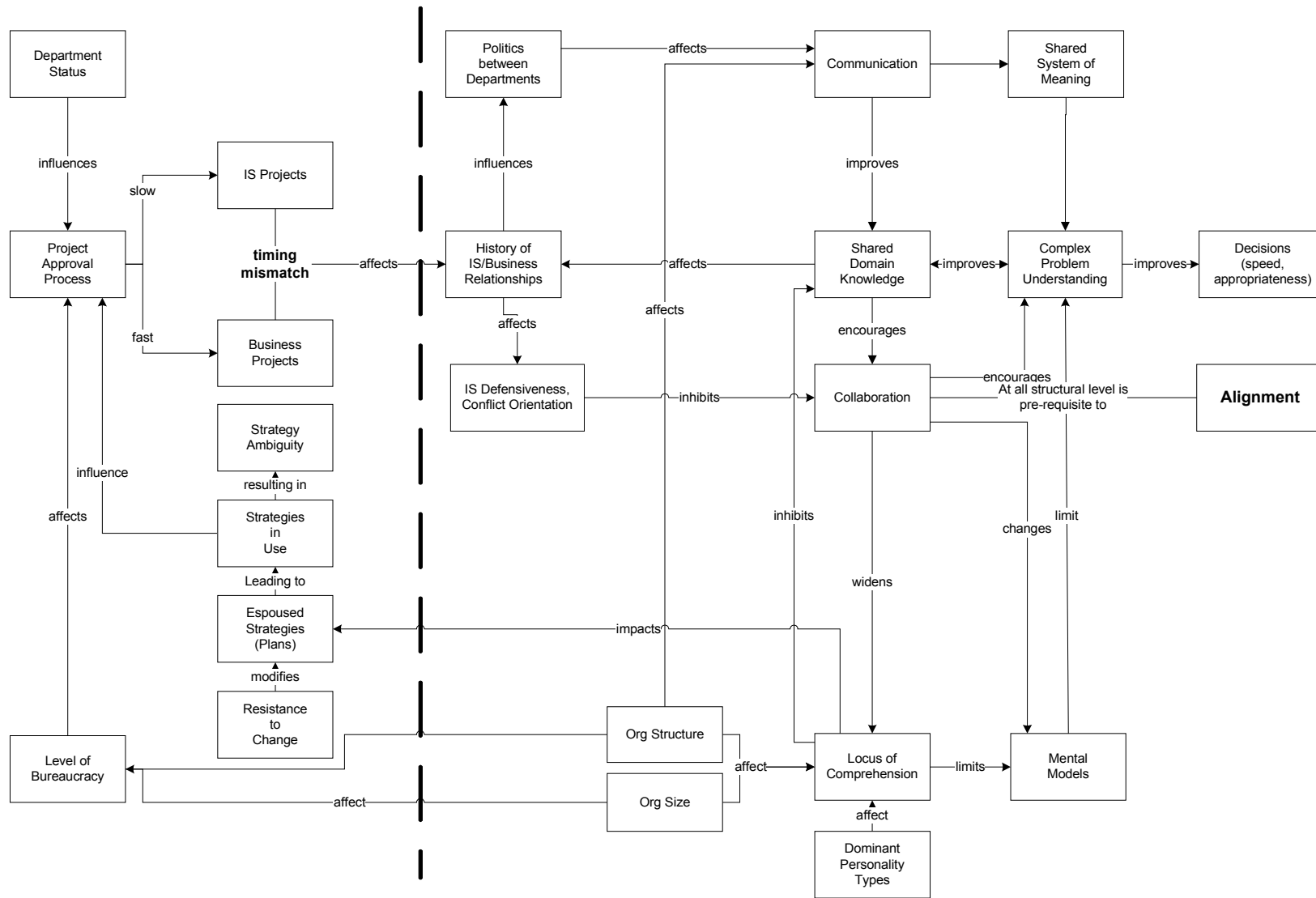
Technocratic: Concerns only for hardware and software performance. Ignores business.

Collaboration: Concentration on learning and understanding. Achieved via communication, developing relationships and collaboration with business. Emphasis on informal lines of communication. Less emphasis placed by IS managers on their own technical expertise.

Appendix F: Samples of Models Constructed as Memos

The first model shown here is that referred to in the first paragraph of the last written memo in Appendix E (Memo Bounded Choices – 30 Jan 05).

The second shows a causal loop diagram constructed after the first two focus groups had been conducted and prior to individual interviews.



Appendix G: Ethics Application

The attached application was submitted and approved in 2004.

APPLICATION FOR AMENDMENT TO EXISTING ETHICS APPLICATION UTS HUMAN RESEARCH ETHICS COMMITTEE

PROJECT TITLE (existing): IS/Business Alignment	
Approval Number: 03/35	Date of Approval: 20 May 2003
Chief Investigator/ (indicate which) Bruce Campbell	
Faculty/School: F.I.T.	Address: 10.4.312
Email: Bruce.Campbell@uts.edu.au	Phone No: 9514 1882
Co-investigator/Co-supervisor: David Avison	
Faculty/School: ESSEC Business School, France	Address:
Email: avison@essec.fr	Phone No: +33134433195
(Note: copy this section as required to accommodate the number of investigators)	
Student:	
Faculty/School:	Address:
Email:	Phone No:
Has doctoral/masters assessment been obtained since your original approval? If not, when will it be sought?	
Please nominate one of the above as the main contact person for ethics correspondence. This is the person who will be responsible for all reporting to and from the HREC throughout the research.	
Bruce Campbell	

SUMMARY OF PROJECT DETAILS

Please provide a brief summary of your research proposal, based on your original ethics application.

Information systems (IS) research covers a wide area and is multi-disciplinary by nature. For the purposes of this application, it covers the management of an organization's information technology and related personnel.

The aim of the research is to gain an understanding of how organizations align the mission, vision and goals of their IS departments with those of the business units.

It is initially assumed that gaining alignment is a social process, whilst the attainment of alignment is a state. This assumption will be investigated as there is confusion in the literature as to whether IS/business alignment is a process or a state.

There is a rich literature advocating the use of improved planning methods to better integrate IS and business strategic plans. An assumption is that integrated plans will lead to better utilization of IS resources and improve IS performance. A corollary is that the level of integration of plans indicates the degree of IS/business alignment, however very few organizations produce formal plans. This strand of research has tended to be technical in nature relying, in many cases, on statistical analysis. This view has recently been challenged in the literature. It has been argued that alignment in the social dimension may be important. This refers to the ability of both business and IS managers and personnel to work together towards a common goal. A preliminary literature search has led to the following tentative hypotheses:

- Alignment in the social dimension is a pre-requisite to gaining long-term IS/business collaboration
- It is IS/business collaboration that allows the alignment of the IS mission, vision and goals with those of the business unit. Formal, integrated plans may then result.
- Alignment in the social dimension is the result of informal networks built up between IS and business personnel.
- IS credibility, including trust, and organizational culture are the major determinants of the development of these informal networks

This work will be significant as it uses, in part, a systemic approach in understanding, and modeling, the development of alignment within an organization. This will then allow earlier research to be placed in context for a deeper understanding of this process.

SECTION I – CHANGES TO PROJECT DETAILS**CHANGES TO PROJECT DETAILS**

What changes to your original ethics application are you proposing?

Change from collaborative research to a student/supervisor situation. This at suggestion of Prof. David Avison the current co-investigator.

Details of Supervisor and Co-Supervisors are below.

The aim of the research will also change slightly as will the methodology. Data collection methods will remain unaltered.

The aim of the research is to investigate the enablers and inhibitors to IS/Business alignment. Data collection will be via focus groups and semi-structured individual interviews. The interviews will be recorded, transcribed then analysed using Grounded Theory as the methodology.

Primary Supervisor (for correspondence to be directed to): Ken Dovey	
Faculty/School: Faculty of Information Technology	Address: CB10.4.351
Email: kend@it.uts.edu.au	Phone No: 9514 7937
Qualifications: PhD (UTS); M.A. (Oregon); B.A. (Hons) (Natal); B.Sc. (Cape Town)	
Experience relevant to this application: I have supervised around 60 Masters Degrees by Researchy and 10 PhD degrees to completion.	

Co-supervisor: David Avison	
Faculty/School: ESSEC Business School, France	Address:
Email: avison@essec.fr	Phone No: +33134433195

Co-supervisor: Jim Underwood	
Faculty/School: F.I.T.	Address: 10.4.340
Email: avison@essec.fr	Phone No: 9514 1831

Student: Bruce Campbell	
Faculty/School: F.I.T.	Address: 10.4.312
Email: Bruce.Campbell@uts.edu.au	Phone No: 9514 1882

RATIONALE FOR PROPOSED CHANGES

Why do you wish to make these changes? (*approximately 100 words*)

The initial research proposal was envisaged as exploratory research prior to enrolling in PhD studies. After initial interviews and analysis were conducted by the then chief investigator the co-investigator recommended that this work form part of doctoral studies.

This application reflects those changes.

IMPACT OF AMENDMENT ON RESEARCH PARTICIPANTS

This section requires you to consider the ways in which your proposed amendments may impact upon the ethical issues raised on your original application. Specifically, we ask you to outline the effects (if any) of your amendments on the following areas, and how you intend to deal with them. Does your amendment affect any of the following:

(a) Outcome of your research? **Yes/No**

The outcome of the research will consist of a PhD dissertation, journal and conference papers.

(b) Current or future applications for funding? **Yes/No**

No changes

(c) Recruitment of participants (quantity, methods) **Yes/No**

No changes

(d) Anticipated risk or harm to participants and/or researchers? (Please explain how do you propose to minimise these risks) **Yes/No**

No changes

(e) Relationships (if any) between researchers and participants? **Yes/No**

No changes

(f) Consent from Participants? (Please attach revised consent form and information sheet if applicable) **Yes/No**

Revised consent and information sheets are attached. These reflect the narrower focus of the proposed research.

(g) Data collection, interpretation, storage and/or disposal? (Please attach changes to surveys/questionnaires/interview questions if applicable) **Yes/No**

No changes to data collection, storage and/or disposal. Interpretation method has changed.

The interpretation method is similar to the original ethics application but will conform to the rigor and recommendations of the Grounded Theory methodology.

(h) Privacy and confidentiality of participants? **Yes/No**

No changes

Will there be any expected change to the completion date of your project? If yes, please provide new date of completion.

PROPOSED COMPLETION DATE: December 2006

