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**ESPOUSED THEORY VERSUS THEORY IN USE:
THE CASE OF
STRATEGIC INFORMATION SYSTEMS PLANNING**

by

Irwin T. J. Brown

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Supervisor:

Professor J. D. Roode

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Declaration

I hereby declare that

**Espoused Theory versus Theory in Use: The Case of Strategic Information Systems
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is my own work, and all sources have been acknowledged through referencing.

.....
I. T. J. Brown

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ESPOUSED THEORY VERSUS THEORY IN USE: THE CASE OF STRATEGIC INFORMATION SYSTEMS PLANNING

ABSTRACT

Strategic information systems planning (SISP) has been a key issue for Information Systems (IS) managers over several decades. As a consequence, much research has been devoted to studying it. Noted concerns have been the gap between opinion and practice, and the absence of a sound theory to underpin it. Attempts at developing an overarching theoretical framework have typically used an input-process-output variance model as the basis. Rich processual elements of SISP, and the existence of feedback loops, which could then lead to improved practice, have, however, been noted as absent from these models.

Synthesis and integration of the above concerns lead to the goal of this study, which was to develop rich processual theories about SISP. The grounded theory methodology was ideally suited to this purpose as it aims to develop theory that is well grounded in data, and therefore very much reflective of the reality presented by that data.

A conceptual theory of SISP was firstly developed by analysing key academic publications about this phenomenon using the grounded theory approach. Next, data was gathered through semi-structured interviews with IS managers and professionals who had experience of SISP. Grounded theory techniques were applied to this data to develop two types of theories – espoused theory and theory in use. These theories were compared with each other and with the conceptual theory in order to gain a better understanding of the theoretical underpinnings of SISP, the gap between beliefs and practices, and how SISP could be improved.

The analysis demonstrated that espoused theory, theory in use and the interplay between them were important to consider in the quest for further improvements in SISP practice. Indeed, an organisational learning approach to SISP, much touted in the literature, was confirmed as most appropriate in the context of a turbulent environment. The lack of double loop learning, however, was noted as inhibiting further improvements. SISP was shown to be essentially a social phenomenon, where human agents are the key drivers. As such the incorporation of alternative theoretical perspectives such as structuration theory into mainstream SISP thinking were noted as necessary. Finally, evidence of the improvisational nature of SISP was presented, leading to the conclusion that improvisational theory may also serve as the basis for an even better conceptualisation of SISP.

Irwin T. J. Brown

Department of Information Systems, University of Cape Town

ibrown@commerce.uct.ac.za

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TABLE OF CONTENTS

Chapter 1	Introduction.....	1
Chapter 2	Theoretical Underpinnings	5
2.1	Introduction	6
2.2	Definitions of Theory	6
2.3	Types of Theory.....	7
2.4	Purpose of Theory	8
2.5	Why Focus on Theory?.....	9
2.6	Elements of Theory	9
2.7	Theories of Action.....	11
2.8	Summary and Critique.....	17
Chapter 3	Literature Review and Meta-Analysis.....	20
3.1	Introduction	21
3.2	SISP - Definitions.....	22
3.3	SISP Objectives	27
3.4	The State of SISP Practices	28
3.5	Methodologies, Methods, Tools and Techniques	29
3.6	Success Factors for SISP	30
3.7	Problems in SISP	31
3.8	SISP Approaches	35
3.9	I-P-O Model of SISP and Meta-Analysis	47
Chapter 4	Research Methodology	83
4.1	Introduction	84
4.2	Positivism, Interpretivism and Criticalism	84
4.3	Research Methods in IS.....	87
4.4	Epistemological Choice.....	90
4.5	Grounded Theory Methodology	91
4.6	Research Objectives and Research Procedure.....	107

Chapter 5	Results and their Analysis.....	119
5.1	Development of <u>Grounded Theory</u> from the Literature Case.....	121
5.2	Preliminary Analysis of Empirical Interview Data – A Summary.....	149
5.3	Using Grounded Theory to Develop Espoused Theory.....	185
5.4	Using Grounded Theory to Develop Theory in Use.....	200
5.5	Comparing Espoused Theory and Theory in Use.....	218
5.6	Comparing Conceptual Theory, Espoused Theory and Theory in Use.....	257
Chapter 6	Conclusions and Recommendations	278
6.1	Introduction	279
6.2	Conceptual Theory Development.....	280
6.3	Preliminary Analysis of Interview Data	283
6.4	SISP Activities.....	288
6.5	Espoused Theory Development.....	292
6.6	Theory in Use Development.....	297
6.7	Comparison of Espoused Theory versus Theory in Use	300
6.8	Comparison of Espoused Theory, Theory in Use and Conceptual Theory.....	306
6.9	Limitations of the Study and Ideas for Future Research	313
6.10	Recommendations and Implications for Theory and Practice.....	314
Chapter 7	Evaluation of Contribution.....	321
7.1	Structuring Intertextual Coherence.....	322
7.2	Problematising Context for Contribution	323
7.3	Positioning as Translating Interests.....	324
7.4	Qualitative Generalisations.....	326
References.....		328
APPENDICES.....		341
	Appendix 1: MMTTs in SISP (Listed Alphabetically)	341
	Appendix 2: Empirical Articles Examined in Quantitative Meta-analysis (1991 – 2002).....	345
	Appendix 3: Quantitative Meta-analysis	348
	Appendix 4: Interview Questions and their Justification	357

LIST OF FIGURES

Figure 2.1: Single versus Double Loop Learning (amended from Moffitt & Peppet, 2004).....	16
Figure 3.1: Levels of IS identified in ISP (derived from Baker 1995, Yeates <i>et al.</i> , 1994).....	25
Figure 3.2: A rational adaptive approach to SISP (Brown 2002, amended from Galliers 1993).....	41
Figure 3.3: ISP Model implied from Lederer & Sethi (1988).....	48
Figure 3.4: IS Planning parameters (Ang <i>et al.</i> , 1995).....	48
Figure 3.5: ISP Model adapted from Premkumar & King (1991) in Mentzas, 1997.....	49
Figure 3.6: ISP Reference Model from Ward <i>et al.</i> (1990) - in Flynn & Hepburn (1994).....	50
Figure 3.7: Feedback in ISP (from Baker, 1995)	51
Figure 3.8: A theory of SISP (Lederer & Salmela, 1996)	52
Figure 3.9: A theory of SISP (Amended from Lederer & Salmela, 1996)	53
Figure 3.10: SISP Theory – An extended set of hypotheses (Amended from Lederer & Salmela, 1996)	80
Figure 5.1: Grounded Theory of SISP based on an analysis of SISP literature.....	146
Figure 6.1: Grounded Theory of SISP based on Literature	282

LIST OF TABLES

Table 3.1: Comparison of ISP Levels (Segars <i>et al.</i> 1998, O' Connor 1993)	26
Table 3.2: Success Factors for SISP.....	31
Table 3.3: Critical Dimensions of SISP Problems (Lederer & Sethi, 1991, p. 113)	32
Table 3.4: SISP Process - Characteristics (Segars <i>et al.</i> 1998, Doherty <i>et al.</i> 1999).....	36
Table 3.5: Alternative SISP Approaches (after the fashion of Segars <i>et al.</i> , 1998).....	38
Table 3.6: Orthodox versus Structural perspective of SISP (Lamprecht & Roode, 1999)	45
Table 3.7: SISP Hypotheses (Amended from Lederer & Salmela, 1996)	56
Table 3.8: Sources of Articles –Journal Sources	58
Table 3.9: Components Researched	59
Table 3.10: SISP Process - Phases and Stages (Brown 2002, Mentzas 1997, Galliers 1993).....	60
Table 3.11: Relationships Researched.....	64
Table 3.12: Extended set of hypotheses derived from qualitative meta-analysis	76
Table 3.13: Hypothesis Testing through Quantitative Meta-analysis.....	79
Table 4.1: Research Approaches identified through Meta-Analysis of SISP Literature	90
Table 4.2: Phases and Activities in Grounded Theory Analysis of Literature	111
Table 4.3: Procedure for Collection and Analysis of Field Data.....	116
Table 4.4: Summary of Key Demographic Factors	118
Table 5.1: Article Sources	122
Table 5.2: Categories, Properties and Dimensions.....	124
Table 5.3: Matrix of Relationships in Conceptual Theory	137
Table 5.4: Tabular Analysis of Conceptual Theory	140
Table 5.5: Key Activities mentioned.....	162
Table 5.6: Key Activities in Use	173
Table 5.7: Summary of Espoused Views versus In Use Views.....	180
Table 5.8 Categories and Concepts within Espoused Theory	186
Table 5.9: Matrix Representation of Espoused Theory Relationships	193
Table 5.10: Tabular Representation of Espoused Theory	194
Table 5.11: Categories and Concepts in the Theory in Use	201
Table 5.12: Matrix Representation of Theory in Use Relationships	210
Table 5.13: Tabular Representation of Theory in Use	211
Table 5.14a: Business Planning System Category – Concept Comparison.....	219
Table 5.14b: Business Planning System Category – Proposition Comparison	220
Table 5.15a: External Environment Category – Concept Comparison.....	222
Table 5.15b: External Environment Category – Proposition Comparison	223
Table 5.16a: Organisational Context Category – Concept Comparison.....	227
Table 5.16b: Organisational Context Category – Proposition Comparison	228
Table 5.17a: IS Function Category – Concept Comparison	232
Table 5.17b: IS Function Category – Proposition Comparison.....	233

Table 5.18a: SISP Process Category – Concept Comparison.....	236
Table 5.18b: SISP Process Category – Proposition Comparison	237
Table 5.19a: Stakeholder Profile Category – Concept Comparison	241
Table 5.19b: Stakeholder Profile Category – Proposition Comparison.....	242
Table 5.20a: Management & Mindset Category – Concept Comparison.....	244
Table 5.20b: Management & Mindset Category – Proposition Comparison.....	245
Table 5.21a: IS Plans & Strategies Category – Concept Comparison.....	245
Table 5.21b: IS Plans & Strategies Category – Proposition Comparison.....	246
Table 5.22a: IS Plan Implementation Category – Concept Comparison	247
Table 5.22b: IS Plan Implementation Category – Proposition Comparison.....	247
Table 5.23a: Alignment Category – Concept Comparison.....	248
Table 5.23b: Alignment Category – Proposition Comparison	248
Table 5.24a: SISP Outcomes Category – Concept Comparison.....	249
Table 5.24b: SISP Outcomes Category – Proposition Comparison	250
Table 5.25: Overall Comparison of Espoused Theory and Theory in Use	251
Table 5.26: Matrix Comparison of Espoused Theory and Theory in Use	254
Table 5.27: Business Planning System Category – Concept Comparison.....	258
Table 5.28: External Environment Category – Concept Comparison	259
Table 5.29: Organisational Context Category – Concept Comparison.....	260
Table 5.30: IS Function Category – Concept Comparison.....	261
Table 5.31: SISP Process Category – Concept Comparison	262
Table 5.32: Stakeholder Profile Category – Concept Comparison.....	264
Table 5.33: Management & Mindset Category – Concept Comparison.....	265
Table 5.34: IS Plans & Strategies Category – Concept Comparison.....	266
Table 5.35: IS Plan Implementation Category – Concept Comparison.....	267
Table 5.36: Alignment Category – Concept Comparison	268
Table 5.37: Evaluation & Outcomes Category – Concept Comparison	269
Table 5.38: Comparison of Relationships between Categories	274
Table 5.39: Matrix Comparison of Theories	277
Table 6.1: Matrix Representation of Conceptual Theory	281
Table 6.2: Tabular Representation of Conceptual Theory.....	281
Table 6.3: Matrix Representation of Espoused Theory	294
Table 6.4: Tabular Representation of Espoused Theory	295
Table 6.5: Matrix Representation of Theory in Use	298
Table 6.6: Tabular Representation of Theory in Use	299
Table 6.7: Overall Comparison of Theories	303
Table 6.8: Matrix Comparison of Theories	310
Table 7.1: Key Concepts for Constructing Contributions (Barrett & Walsham, 2004).....	321

Chapter 1 Introduction

Improving Strategic Information Systems Planning (SISP) has remained a key issue for Information Systems (IS) Managers for the good part of two to three decades (Niederman *et al.* 1991, Baker 1995, Luftman & McLean 2004). These concerns have caught the attention of IS Managers globally (Watson *et al.* 1997, Hart *et al.* 2004). At the same time, and as a consequence of this, much research attention has been devoted to studying this phenomenon.

Early research focused on the development of methods, tools and techniques, but with little apparent improvement (Baker, 1995). Lederer & Sethi (1988) identified a series of problems with the application of SISP methodologies that often lead to plan implementation failure. Through these and other studies, it was recognized that lack of a sound theoretical framework for SISP was hindering research. Lederer & Salmela (1996) therefore developed a variance theoretical framework, based on the conceptualisation of SISP as an input-process-output model. A meta-analysis by Brown (2004) extended this framework, but still had some shortcomings, in that rich processual elements of SISP were not easily captured by predominantly cause-effect hypotheses typical of a variance model.

Baker (1995) demonstrated that part of the reason for lack of improvement was that despite being conceptualised as an input-process-output system an important element (that of feedback) was missing from this conceptualisation. She therefore suggested two feedback loops – one during plan formulation, and another, feedback on the SISP system as a whole. These two loops correspond with the single loop and double loop learning cycles espoused by Argyris & Schon (1974) in their treatise on organisational learning. The presence of such loops in SISP, it was believed, would lead to continuous improvement (Baker, 1995). In a similar manner, King (2000) advocated for incremental improvement in order to effect change to SISP in organisations. As he stated, it may not be necessary for organisations to “... ‘wipe the slate clean’, and

adopt the kinds of ISSP that consultants advise and textbooks describe” (p. 1). Rather through evolutionary change, improvement can be made.

Galliers (1987) noted too this difference between prescriptions for SISP and actual practice. He asserted that *“The differences between opinion and practice as regards the proper conduct of information systems planning studies... may go some way to explaining why it is that information systems planning has met with mixed success only.”* (p. 247). This gap between opinion (e.g., models of SISP) and practice was clearly demonstrated by Flynn & Hepburn (1994), who highlighted the political rather than rational nature of SISP in organisations.

These findings concur with the observation by Argyris & Schon (1974) that *“the old idea of a working relationship between theory and practice has yet to be realised”* (p. 2). Checkland and Howell (1998) note that in the IS discipline there should be a closer working relationship between theory (ideas), and practice (the use of ideas). The reality is that the two are not working as harmoniously as expected (Checkland, 2002). Indeed, this may be the reason for the continual ranking of improving SISP as a key issue to IS managers despite decades of research (Niederman *et al.* 1991, Baker 1995, Watson *et al.* 1997, Luftman & McLean 2004, Hart *et al.* 2004). Inadequate attention has been given to the development of theory that informs the practice of formulating and implementing IS strategy. Synthesis and integration of the above issues concerning the need for a sound theory in SISP, the gap between theory and practice, and lack of learning in SISP systems informed the research objectives for this study.

Concerning theory development, an alternative to meta-analysis was needed that more richly described the key conceptual processes within SISP as well as the impacts of context. An approach ideally suited for this purpose is the grounded theory methodology. Strauss & Corbin (1998) define a grounded theory as one that is *“derived from data, systematically gathered and analysed through the research process”* (p. 12). The justification for this emphasis is that *“theory derived from data is much more likely to resemble the ‘reality’ than is theory derived from putting together a series of concepts based on experience or solely through speculation...”*

(Strauss & Corbin, 1998, p. 12). The grounded theory method (GTM) describes how to develop such theory (Bryant, 2002). Urquhart (2002) notes that “*One useful side effect of using GTM in IS could be a much more detailed consideration of the role of theory - and generation of our own theories specific to IS*” (p. 51). As such, therefore, the grounded theory methodology was selected as the means whereby theory was to be developed in this study.

Galliers’ (1987) point about the differences between opinion and practice, and the need for learning in SISP (Baker, 1995) suggested that perhaps the ideas of Argyris & Schon (1974) with regards to theories of action, and their role in organisational learning should provide the theoretical underpinning for this study. Theories of action are concerned with human action and behaviour (Argyris & Schon, 1974). Two theories of action are distinguished – espoused theory and theory in use. Espoused theory is defined as that to which a person gives allegiance and vouches for, and which is readily proffered if asked, whilst theory in use is that which actually governs an individual’s behaviour (Argyris & Schon, 1974, p. 7). In this study, the actions to be examined are those related to strategic planning for information systems in organisations, and the relationships between espoused theory and theory in use regarding this phenomenon are to be elucidated. This will shed light on why there is a difference, and how this impacts on SISP success.

The research objectives were therefore as follows:

1. To re-examine the literature employing a methodology whose specific purpose is the development of theory – i.e., grounded theory methodology. The theory developed here will be referred to as conceptual theory.
2. To gather data from IS planners in order to establish their beliefs and opinions about SISP, and use the grounded theory methodology once again to develop a theory of SISP labelled espoused theory, in accordance with the definition provided by Argyris & Schon (1974).
3. To gather data from IS planners with regards to their reflections on practices in SISP and develop from this data a theory labelled theory in use, using the grounded theory methodology.

4. To compare espoused theory with theory in use in order to understand how to bridge the gap between the two.
5. To compare espoused theory and theory in use with the conceptual theory derived from literature.
6. To draw conclusions from an examination of these differences, and develop insight as to the reasons for the gap between these alternative theoretical perspectives, and how they might be bridged.

In the next chapter (Chapter 2) the theoretical underpinnings of the study will be discussed, i.e., a more detailed discussion concerning the terms espoused theory and theory in use. The grounded theory methodology is being used as the means whereby these theories of action can be developed and represented. In Chapter 3, the literature on Strategic Information Systems Planning (SISP) will be comprehensively analysed. Also included will be the meta-analysis conducted prior to this study, as it provided the impetus for further examining SISP theory. In Chapter 4 the Research Methodology will be discussed by examining alternative approaches to SISP research that have been previously employed, as well as alternative paradigms, before more specifically outlining the grounded theory methodology and the research procedure employed in this study. Chapter 5 details the results and their analysis before the conclusion and recommendations in Chapter 6, and evaluation of the study contribution in Chapter 7.

Chapter 2 Theoretical Underpinnings

2.1	Introduction	6
2.2	Definitions of Theory	6
2.3	Types of Theory.....	7
2.4	Purpose of Theory	8
2.5	Why Focus on Theory?.....	9
2.6	Elements of Theory	9
2.6.1	What.....	10
2.6.2	How	10
2.6.3	Why	10
2.6.4	Who-Where-When.....	11
2.7	Theories of Action	11
2.7.1	Eliciting Theories of Action	12
2.7.2	Implications of Theories of Action.....	13
2.7.3	Single loop versus Double loop learning.....	14
2.7.4	Applications of Organisational Learning	16
2.8	Summary and Critique.....	17

2.1 Introduction

This study derives its title from the work of Argyris & Schon (1974) who focused their research on examining theories of action. Theories of action are about human action and behaviour (Argyris & Schon, 1974). Two theories of action are distinguished – espoused theory and theory in use. Espoused theory is defined as that to which a person gives allegiance to and vouches for, and which is readily proffered if asked, whilst theory in use is that which actually governs an individual's behaviour (Argyris & Schon, 1974, p. 7). In this study, the actions to be examined are those related to strategic planning for information systems in organisations and the relationships between espoused theory and theory in use regarding this phenomenon are to be elucidated. As a consequence, before analysing the literature on SISP, the theoretical underpinnings of the study *vis-à-vis* espoused theory versus theory in use will be addressed. This will be done by firstly discussing the concept of theory in general, and then more specifically theories of action.

In the next section various definitions of theory that have been proffered will be outlined, before going on to address different types of theory, their importance, elements and characteristics, and finally a detailed section on theories of action.

2.2 Definitions of Theory

Defining theory is not an easy task given the diversity of opinion as to what constitutes a theory, and what purpose the concept serves (Weber, 2003). It is nevertheless deemed necessary given that there is often an unstated assumption in many theoretical treatises that the meaning of theory can be taken as given (Locke, 2001). Three definitions from alternative sources are as follows:

“An account that is intended to explain or predict some phenomena that we perceive in the world” (Weber, 2003, p. iv).

"A set of inter-connected propositions that have the same referent – the subject of the theory. Their interconnectedness is reflected in the logic of relationships among propositions..." (Argyris & Schon, 1974, p. 4). They further state *"theories are vehicles for explanation, prediction, or control"* (p. 5).

"A set of well-developed concepts related through statements of relationship, which together constitute an integrated framework that can be used to explain or predict phenomena" (Strauss & Corbin, 1998, p. 15).

There is consistency across all three definitions in that explanation and prediction are terms always mentioned. The above definitions are in line with what Locke (2001) refers to as *"the received scientific view of theory"* (p. 35). Other alternative perspectives of theory Locke (2001) identifies are *"process narratives"*, or *"enlightenment devices"*. The view of theory adopted in this study is the received scientific view, whilst not discounting the validity of the other alternative perspectives.

2.3 Types of Theory

Several researchers make mention that there are different types of theory. Argyris & Schon (1974), for instance, note that theories can vary from being practical and common sense to academic or scientific. They consider theories of practice to be special cases of theories of action, given that they define practice as *"a sequence of actions undertaken by a person to serve others, who are considered clients"* (p. 6).

Glaser & Strauss (1967) developed the concept of grounded theory, which they defined as *"theory that is derived from data systematically gathered and analysed through the research process"* (Strauss & Corbin, 1998, p. 12). This distinguishes it from theory derived by logical deduction based on *à priori* assumptions, or theory derived from researcher experience, speculation or common sense (Glaser & Strauss 1967, Strauss & Corbin 1998). One of the many advantages of generating grounded theory is that since it is derived from data it offers insight and understanding of a

specific phenomenon, and provides a meaningful guide to action (Strauss & Corbin, 1998). As such, in the context of this study where theories of action related to the practice of SISP are investigated, employing the grounded theory methodology is a novel idea. Two types of grounded theory may be developed – substantive (or empirical) theory, or formal theory (Glaser & Strauss, 1967). Substantive theory relates in more detail to a specific area of practice, for example in this study, SISP. A formal theory on the other hand may be more abstract, and apply to the notion of planning in general, whether it is strategic, tactical or operational, and whether it be for information systems, marketing or human resources.

2.4 Purpose of Theory

Theory serves multiple purposes, as indicated from the definitions provided in Section 2.2 above. Integrating the purposes for theory listed by Argyris & Schon (1974, p. 5) with those from Glaser & Strauss (1967, p. 3) yields the following major aims:

- To enable explanation of a phenomenon, event or behaviour.
- To enable prediction of a phenomenon, event, or behaviour.
- To be useful in practical applications in order to give an agent some understanding and control of situations, i.e. a theory of control.
- To be useful in theoretic advance in a discipline.
- To provide a perspective on behaviour – a stance to be taken towards data.
- To guide and provide a style for research on particular areas of behaviour.

Theory in this study will serve all of the above purposes. Theories related to espoused and in use views on SISP will be developed using the grounded theory methodology. The resultant theories should furthermore be of benefit to practitioners for improving their SISP systems, and will add to the body of knowledge on strategic planning for information systems. The use of the grounded theory methodology, which, notes Glaser (1992), is a theory in itself, provides the stance to be taken towards data, and dictates the style and procedure for the research.

2.5 Why Focus on Theory?

The information systems (IS) discipline is fairly new in comparison to the more established fields. As such, much theory is borrowed from its reference disciplines, which include sociology, psychology and computer science, amongst others (Checkland & Holwell, 1998). IS studies focused on theory development have therefore gained prominence, as reflected by the call for more theory-only submissions to one of the most prestigious journals in the discipline, MIS Quarterly (Weber, 2003). More recently still, in 2004 the IFIP TC8 Working Group 8.2 held a conference aptly titled *"20th Year Retrospective: Relevant Theory and Informed Practice – Looking forward from a 20-year perspective on IS Research"*. The major theme was theory in IS.

Weber (2003) notes that theory-building skills need to be improved in the IS discipline in order for it to mature, and better serve practice. Weber (2003) further points out that more theory-testing than theory-building research is undertaken in the IS discipline, and so more theory-building articles need to be published. Strauss & Corbin (1998) provide support for these arguments when they state that for the development of a field of knowledge, it is important to develop theory about phenomena, rather than just come up with a set of findings about them.

There have been several calls and several attempts at developing a strong theory to underpin SISP (Lederer & Salmela 1996, Lamprecht, 1997). These efforts are certainly necessary given that improving SISP continues to be ranked as a key issue by IS Managers despite decades of research (Baker 1995, Luftman & McLean 2004). For increased knowledge and enlightenment around the phenomenon, further work is still needed, thus justifying this study.

2.6 Elements of Theory

Whetten (1989) notes that in order for a theory to be complete, it needs to address four essential elements: "What"; "How"; "Why"; and "Who, Where, When".

2.6.1 What

The “What” element of theory is concerned with the variables, constructs, categories or concepts that are relevant to the explanation or prediction of a phenomenon. There is much debate within IS as to whether theories should be rich or parsimonious (Plouffe *et al.* 2001, Weber 2003). A balance has to be sought whereby all relevant factors need to be included in the theory, whilst at the same time considering which factors are adding little value and therefore can be deleted (Whetten, 1989). Using a grounded theory method, this balance can be achieved by potentially grouping all relevant concepts into a higher order concept called a category (Locke, 2001). The process further involves selective coding whereby the core category is defined, whilst other categories are refined and sometimes removed (Strauss & Corbin, 1998).

2.6.2 How

This element relates to how the key factors that have been identified are related. Typical relationships denote causality (Whetten, 1989). However, this is not the only type of relationship. Contingency theory suggests that certain relationships may be contingent upon environmental conditions, whilst some variables may moderate or mediate the relationship between variables. For example, Strauss & Corbin (1998) recognise the existence of intervening conditions, in addition to causal, where intervening conditions mitigate against the impact of causal conditions on phenomena. Whilst it is useful to present theory in the form of a diagram or model, this is not always necessary. Glaser & Strauss (1967) suggest that theory may be represented as a running theoretical discussion, or as a codified set of propositions or hypotheses. Whetten (1989) distinguishes between the latter two terms by noting that propositions involve relationships between concepts, whereas hypotheses require more specific measures.

2.6.3 Why

Whetten (1989) states that the “What” and “How” of theory are useful in describing phenomena and provide a framework for interpreting patterns. However, description alone is not sufficient for good theory. As indicated in the definitions in Section 2.2

above, a theory needs also to provide explanatory power for phenomena. The “Why” provides this explanatory element, i.e., the theory’s rationale or set of assumptions. Argyris & Schon (1974) in similar manner assert that the assumptions, or governing variables concerning a phenomenon are a necessary part of the theory of action related to it.

2.6.4 Who-Where-When

The questions “Who”, “Where” and “When” place the theory in some context, and in so doing define the limits of its generalisability (Whetten, 1989). This is achieved in grounded theory by identifying contextual conditions that represent the environment surrounding phenomena (Strauss & Corbin, 1998).

2.7 Theories of Action

As defined in Section 2.1, theories of action are of two types – espoused theory and theory-in-use. Scott (1969) [in Argyris & Schon (1974), p. 8] in his work on agencies for the blind noted that many of these agencies held an espoused view that “*The blind are potentially independent, agencies for the blind function to help the blind realise that potential*”. In practice, however, the way they functioned in many cases (their theory-in-use) was very much that “*The blind are basically dependent on the agencies, that it is a function of the agencies to sustain the dependence through continuing service, and the blind should adopt to life in an agency setting*”. This example amply illustrates the difference between the two perspectives.

Several manifestations of this phenomenon have also been highlighted in the IS literature. For example, in Kock *et al.* (2002), it is noted that IS researchers often espouse that there needs to be greater relevance of research to practice, but in reality such relevance is not given much attention. Notably, the major reason for this incongruence is said to be that “*IS Faculty are rewarded for publishing in top research journals, as opposed to practitioner-oriented journals... Proclaiming our relevance to practice (or saying we should be more relevant) is a very worthwhile activity, as long as young researchers do not take these proclamations too seriously.*

We must remember that IS research is done primarily for its own sake and for publication in top research journals." (Kock et al., 2002, p. 333). Although this is a somewhat controversial view on the motivation for IS research, it does amply illustrate the incongruence between espoused and in use views, and proffers some reasons for this incongruence.

2.7.1 Eliciting Theories of Action

While espoused theory can be elicited by asking a person what they would do in a given situation, theories in use, according to Argyris & Schon (1974) are often tacit and implicit. These theories may be incongruent with the espoused theory, and an individual may not even be aware of the incongruence (Argyris & Schon, 1974). Thus, theory in use cannot simply be inferred from espoused theory. Furthermore, individuals often know more than they can say (Polanyi, 1966), and so asking an individual to state their theory-in-use may not reveal the complete theory. On the other hand, people know more than their behaviour may reveal. Thus, observation as a means of defining theory in use also has limitations.

In attempting to uncover theory in use, therefore, both observable behaviour as well as tacit knowledge needs to be examined. There has to be a presumption, then, that this tacit knowledge can be made explicit in some way. Indeed, Ciborra (1999) notes that tacit motives "*could be inferred by an outsider, or made explicit by the actor, but only as a result of a reflection after the fact*" (p. 144). To aid in such reflection necessary to make explicit the implicit, Argyris & Schon (1974) suggest the use of imaginative experiments indicating what would be done under various circumstances.

One such method used by Argyris & Schon (1974) involves writing case studies about interventions that an agent has been involved in. Senge (1990) defines the method as the Left-hand column method, as part of the process involves drawing up two columns. In the right hand column the agent writes down what was said during an intervention. In the left-hand column the agent writes down the thoughts that were going through his or her mind while the intervention was taking place. This method helps to bring hidden assumptions and motives to the fore, and shows how they

influence behaviour (Senge, 1990). Argyris & Schon (1974) view group discussion about these as an important part of the process. Senge (1990) too points out that “*the eye cannot see itself*” (p. 202) and thus the assistance of another person helps to make explicit an individual’s theories in use.

The left-hand column method is not the only technique that has been used to develop theories in use. Tsangaridou & O’Sullivan (2003), for example, examined the espoused theories and theories in use of Physical Education teachers. In order to construct these theories they employed observation, as well as formal and informal interviews. Espoused theory was seen as that which reflected a teacher’s beliefs about teaching and schooling, whilst the theories in use were those that directly informed actions and practices (Tsangaridou & O’Sullivan, 2003). With the view of espoused theory adopted here, this theory can no longer be dismissed simply as that which people readily say they would do in a given situation – it now represents strongly held views, beliefs and convictions about a phenomena, and of how actions should be performed. In the light of this interpretation, espoused theory holds greater significance than is often the case.

2.7.2 Implications of Theories of Action

The major benefit to be derived from a consideration of espoused theories of action and theories in use is that they act as learning tools, allowing an agent to uncover the theories that actually govern behaviour, and to then learn from this what factors need to be addressed in order to improve on practice, and become more effective (Argyris & Schon, 1974). Although much of the discussion thus far appears to be directed at helping individuals to learn, a cursory review of literature reveals that the work of Argyris & Schon (1974) pervades much of the discourse on organisational learning (e.g., Senge 1990). However, the question as to whether these ideas on learning can indeed be applied to entities such as groups, departments or organisations has been a moot point (Argyris, 1999). Argyris (1999) sees this dilemma as being a problem of levels of aggregation. As stated:

At what levels of aggregation - individual, interpersonal, group, inter-group, or whole-organisation – does it make sense to speak of productive organisational learning? More specifically how should we think about the role of interpersonal interaction and its relationship to patterns of activity at higher levels of aggregation? Some of the most prominent researchers in the scholarly branch of the field of organisational learning refer mainly to the actions or interactions of departments or groups within the world of an organisation or of whole organisations within larger ecologies. In contrast we emphasise the importance of interpersonal inquiry carried out within the constraining or enabling context of an organisational learning system, focusing on how such inquiry interacts with processes described as occurring at higher levels of aggregation (p. 19).

This is the perspective of organisational learning adopted in our research study, where the views of **individual** planners are sought concerning the **organisational** phenomenon of strategic information systems planning (SISP).

2.7.3 Single loop versus Double loop learning

Argyris & Schon (1974) assert that while espoused theories of people vary quite considerably, theories in use are typified by two different forms of behaviour - Model 1, and Model 2, respectively.

Model 1 behaviour is that which is most often exhibited, and according to Argyris *et al.* (1985) [also in Moffitt & Peppet (2004)] is governed by four principles: (1) Achieve the intended purpose; (2) Maximise winning and minimize losing; (3) Suppress negative feelings; (4) Emphasise rationality. This behaviour appears very much consistent with the rational goal-seeking model of planning often espoused in the traditional planning literature (Lamprecht, 1997). Due to the emphasis on maintaining control, the negative consequences of such behaviour are often defensiveness, misunderstanding, self-fulfilling prophecies, self-fulfilling processes and escalating error (Argyris *et al.* 1985 p. 92, Moffitt & Peppet, 2004). The learning outcomes are described as single loop learning, i.e., “*acting to achieve a desired result without reflection upon the true appropriateness or value of that action and its intended result*” (Paul, 2003, p. 38). The underlying norms, values and guidelines are left untouched, and an attempt is made at making corrections within these constraints.

Such learning is also referred to as adaptive learning by Nutley & Davies (2001). They define adaptive learning from a systems perspective in line with the writings of Senge (1990) who highlights systems thinking as an important discipline within organisational learning. As such adaptive learning is much like a self-regulating system that *“depends upon building information flows that enable negative feedback. It is the negative feedback loops within a system which allow it to detect when it veers away from a desired course and this in turn triggers corrective behaviour to bring it back on course”* (Nutley & Davies, 2001, p. 37). Single loop learning is not all bad, and negative. It serves a useful purpose especially for routine and repetitive operational issues to help improve efficiencies (Argyris, 1999).

Model 2 behaviour holds to 3 principles: (1) Valid information; (2) Free and informed choice; (3) Internal commitment to the choice, and monitoring of implementation (Argyris *et al.* 1985, Moffitt & Peppet 2004). Actions that hold to these principles involve sharing control with competent others rather than trying to unilaterally control events (Argyris *et al.* 1985). There is a balance between advocacy and inquiry to promote collaborative learning (Argyris *et al.* 1985, Senge 1990). Pure advocacy involves stating a strongly held viewpoint, and not accepting any other, seeking only to justify it in comparison to others. Pure inquiry, on the other hand, is also limited in that questions are continually asked, often as a means of keeping hidden an unstated viewpoint (Senge, 1990). If there is a balance between the two, people are prepared to make explicit their viewpoints, and invite questioning of them. In this environment learning takes place (Senge, 1990). The learning outcome of Model II behaviour is double loop learning. This type of learning is succinctly described by Greenwood (1998) as follows:

“Double loop learning involves reflection on values and norms and, by implication, the social structures which were instrumental in their development and which render them meaningful. By reflecting on the world they are instrumental in making, human agents can learn to change it in ways that are more congruent with the values and theories they espouse” (p. 1049).

Nutley & Davies (2001) refer to this type of learning as generative learning, as it leads to a redefinition of organisational goals, norms, guidelines and structure, calling into question the nature of the course plotted, and feedback loops used to maintain that course. Huysman *et al.* (1994) state that generative learning may be much broader than double loop learning, given that it involves information flows, work organisation and operating goals, values and rewards. The difference between single and double loop learning is illustrated in Figure 2.1 below.

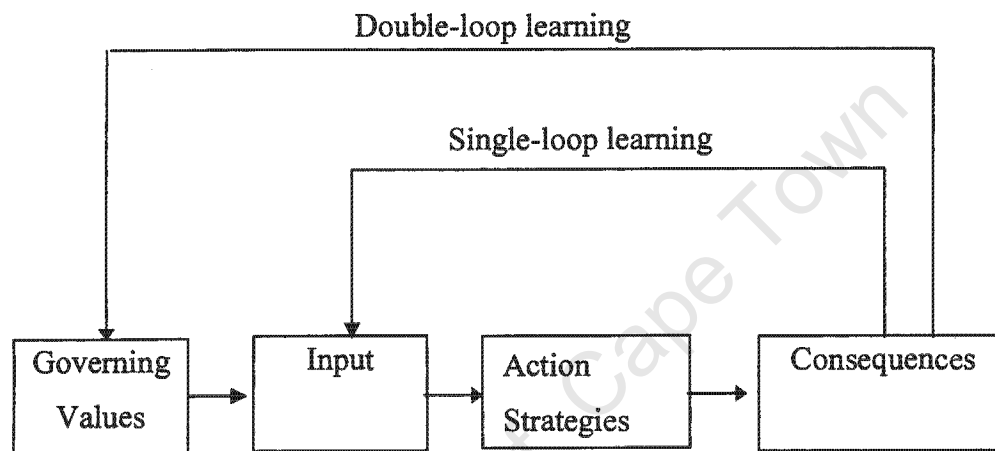


Figure 2.1: Single versus Double Loop Learning (amended from Moffitt & Peppet, 2004)

2.7.4 Applications of Organisational Learning

The seminal work of Argyris & Schon (1974) spurred a lot of interest in organisational learning, especially in the 1990s, due in no small part to the popularity of Senge's (1990) book – "The Fifth Discipline". The concepts have been applied and investigated in a wide variety of disciplines and settings including negotiation (Moffitt & Peppet, 2004); education (Paul, 2003); nursing (Greenwood, 1998); the National Health Service (Nutley & Davies, 2001); non governmental organisations (Bloch & Borges, 2002); and importantly for this study, information systems planning (Huysman *et al.* 1994, Baker 1995). The application of organisational learning to SISP will be discussed in Chapter 3.

2.8 Summary and Critique

In this section, we have clarified the definition of theory that is ascribed to. It is very much in conformance with the received scientific view, which sees theory as a set of interrelated concepts that together can be used to explain, predict or control phenomena. The relative newness of the IS discipline, and the paucity of research concerning theory development in IS and in SISP specifically provides justification for this focus on theory. The elements that constitute a good, complete theory are the “What”, “How”, “Why”, “Who-Where-When” (Whetten, 1989). The types of theory of specific interest to this investigation are the espoused (those which people give allegiance to), and theories in use (those that actually govern behaviour). These theories of action serve as a useful tool for learning about individual and organisational behaviour, and how effectiveness in action can be improved (Argyris & Schon, 1974). Whilst espoused theories vary, in general Argyris & Schon (1974) have found that theories in use are of two types – Model 1 behaviour that leads to single loop learning, and Model 2 behaviour that leads to more effective double loop learning, in which assumptions, norms and values are questioned.

Espoused theory has been given shrift attention in much of the organisational learning literature, being dismissed simply as what people say they would do in a given situation if asked. Tsangaridou & O’Sullivan (2003), however, note that this espoused theory could be a reflection of strongly held beliefs and values, and therefore it should not so easily be dismissed. In this study, the espoused theory will be interpreted as being the beliefs amongst IS planners of how SISP should be carried out, and will be accorded the same attention as theory in use.

Argyris & Schon (1974) state that theory in use can only really be derived through observation of behaviour due to its tacit nature, and because people cannot easily explain the theories that govern their actions. They note, nevertheless, that even though a theory in use may exist, the corresponding behaviour may not manifest if, for example, something happens that prevents a person from performing according to their theory in use. In interpretive research, it is recognised too that the very act of observation by a researcher may result in the observed altering behaviour. Thus, in as

much as asking a person to explain their theory in use is flawed, so is observation. The various diagnostic tools for constructing theory in use such as the left-hand column method involve a hermeneutic process whereby an individual interprets events, albeit through a process of writing case studies reflecting on what was said, and what was thought as interactions took place.

Employing such a method is deemed not feasible for the purpose of this study, given that it focuses attention on a specific action, and the theory in use to be developed is for a complex series of actions that are performed in SISP. If employed it would have required an inordinate amount of time from research subjects. Such an approach would also have pushed the study towards more of an organisational learning exercise, rather than a research investigation. SISP is a complex and sometimes lengthy process and often takes place, not only in formal workshop sessions, but also in *ad hoc* and informal one-on-one discussions at various intervals across time and space. Thus, observation as a means of eliciting theory in use is not always a feasible option.

The means chosen for eliciting theory in use from subjects is therefore the same as for espoused theory – through participant explanation provided in interviews. In order to distinguish between the two perspectives, espoused theory is to be derived from what IS planners believe should be done in a given situation, whereas the theory in use is to be derived from explanations of what was done in practice. Ciborra (1999) provides support for such an approach by noting that tacit motives (*e.g.*, theory in use) can be made explicit, but only as a result of reflection after the fact. Thus, by asking respondents to reflect on what they have done in the past, theory in use can be derived. Perhaps justifying this approach to eliciting theory, Hughes (1980, p. 109) cited in Lamprecht (1997, p. 28) make the following statement:

... the description of action involving motive, intention, or awareness is not a matter of hypothesising an 'inner state' to account for some 'outward' display of behaviour. Nor is it confined solely by the character of the 'outward' behaviour itself. Actions are described against a background of appropriate context or

circumstance, and there are always various combinations of elements out of which a description can be assembled”.

Thus, interviews allow IS planners to describe how SISP was carried out, in the process supplying contextual and circumstantial evidence that provides for the construction of a rich theory.

In the next Chapter, the literature on SISP will be reviewed and alternative theoretical perspectives on SISP will be highlighted. Findings from a meta-analysis that was conducted prior to this doctoral study will also be reported. This meta-analysis was published in Brown (2004).

Chapter 3 Literature Review and Meta-Analysis

3.1	Introduction	21
3.2	SISP - Definitions	22
3.3	SISP Objectives	27
3.4	The State of SISP Practices	28
3.5	Methodologies, Methods, Tools and Techniques	29
3.6	Success Factors for SISP	30
3.7	Problems in SISP	31
3.7.1	Challenging Assumptions about SISP	32
3.8	SISP Approaches	35
3.8.1	Characterising alternative approaches	35
3.8.2	Soft Systems Thinking and SISP	39
3.8.3	Organisational Learning and SISP (Huysman <i>et al.</i> , 1994)	41
3.8.4	SISP – An Improvisational Perspective (Ciborra, 1999)	43
3.8.5	A Structural View of SISP (Lamprecht & Roode, 1999)	44
3.9	I-P-O Model of SISP and Meta-Analysis	47
3.9.1	Theoretical Framework for SISP Meta-Analysis	52
3.9.2	Definitions of Components within the SISP System	54
3.9.3	Qualitative Meta-analysis	56
3.9.4	Quantitative Meta-analysis	76
3.9.5	Discussion and Critique of Extended Theoretical Framework	81

3.1 Introduction

Despite two to three decades of research effort, improving strategic information systems planning (SISP) continues to be ranked as a key IS management issue, not only in the developed North, but globally (Niederman *et al.* 1991, Baker 1995, Brancheau *et al.* 1996, Pervan 1997, Watson *et al.* 1997, Pimchangthong *et al.* 2003, Hart *et al.* 2004, Luftman & Mclean 2004). This interest in SISP stems from the belief that information systems are a key resource for organisations, capable of providing strategic advantage, and improving overall business performance if correctly aligned with business strategy (Pant & Hsu 1999, Luftman & McLean 2004). They therefore need to be managed strategically, planning being key to this endeavour.

In the modern era, described variously as the information age or knowledge age, IS are furthermore ubiquitous in many organisations, and have the potential to play an increasingly important role. E-business, for example, is the phrase coined to denote the use of Internet technologies to support both internal operations and processes within a firm, as well as those between firms (Pant & Ravichandran, 2001). These types of information systems offer many potential benefits if adequately planned for and implemented (Pant & Ravichandran, 2001). Thus, SISP continues to be of importance even in this modern e-business era (Salmela & Spil, 2002). In addition, information systems continue to evolve and grow in complexity as technology, the competitive environment and business strategies change (Benamati & Lederer 2001, Ciborra & Hanseth 2001). SISP may help organisations make sense of this complexity, as by adopting this practice, firms are able to analyse the environment, keep track of new developments, monitor how IT is being used by competitors, plan for adequate IT infrastructure, and establish how best IS can be used to both support and impact business strategies and objectives (Salmela & Spil, 2002). The efficacy of SISP has furthermore been demonstrated in several studies (Premkumar & King 1994, Cohen 2002). Nevertheless, problems still persist, thus the need for more research.

In this chapter the definition of SISP adopted is clarified, and a review of key literature is undertaken. Various alternative perspectives on SISP are then examined, followed by a meta-analysis of SISP studies published in academic peer-reviewed publications between 1991 and 2002. This meta-analysis was conducted prior to formulation of a research question for this study. In essence, therefore, it provided input into clarifying and justifying the research question. The meta-analysis was published in the Information Resources Management Journal (see Brown, 2004). Following the meta-analysis, a brief discussion of the revised theoretical framework derived from it is reported, and a critique is offered, justifying the need for re-analysis of literature using an interpretive approach.

3.2 SISP - Definitions

Various definitions of SISP have been suggested in the literature, with the terms ISP, strategic ISP or IS strategic planning (ISSP), and IS strategy often used interchangeably (Baker 1995, Hagmann & McCahon 1993). In this section, definitions are compared and contrasted, and an attempt is made at distinguishing between them.

Galliers (1991) recognises SISP as being concerned with the identification of strategic and competitive IS together with the human, organisational and infrastructure issues related to their successful implementation. Strategic IS are defined as *"IS that directly support the creation and implementation of an organisation strategic plan"* (Huff & Beattie, 1985 in Galliers, 1991, p. 56). Competitive IS, on the other hand, are those that *"directly support the execution of strategy by improving the value/cost relationship of the firm in its competitive environment"* (Huff & Beattie, 1985 in Galliers, 1991, p. 56). The term strategic IS, however, is often used in the IS literature to refer to competitive IS (Hagmann & McCahon 1993, Chu 1995). Thus, to prevent any confusion, the term strategic IS will be assumed to refer to both strategic IS and competitive IS as defined above.

The complexity of SISP is recognised by Lederer & Sethi (1988) who, in formulating a definition of SISP, adopted a dichotomous view. On one side of the dichotomy they recognise it as the process of identifying a portfolio of computer-based applications that will support business plans and goals. On the other side of the dichotomy SISP can also involve identifying applications with the ability to create competitive advantage. They state also that SISP involves prioritising the applications, defining databases, data elements, and a communications and network infrastructure to support the applications. A schedule for implementation should also be considered (Lederer & Sethi, 1988).

Earl (1993) states that according to the literature ISP is concerned mainly with:

- Aligning investment in IS with business goals;
- Exploiting information technology (IT) for competitive advantage;
- Directing efficient and effective management of IS resources and
- Developing technology policies and architectures.

The perspective of **strategic** ISP adopted by Earl (1993), however, was that of IS strategy (the first two concerns). The third issue Earl (1993) called information management strategy, and the fourth information technology (IT) strategy.

Segars *et al.* (1998) provide a rather comprehensive definition of SISP. They firstly develop the context of SISP in terms of its scope (organisational), perspective (that of top management), time frame (far into the future) and level of abstraction (conceptual). Within this context, they describe SISP as addressing the following agenda:

- Supporting and influencing the strategic direction of the firm through identification of value adding computerised information systems.
- Integrating and co-ordinating various organisational technologies through development of holistic information architectures, and
- Developing general strategies for successful implementation.

Baker (1995) provides a holistic definition of ISP, describing it as involving “*the identification of prioritised information systems (IS) that are efficient, effective, and/or strategic in nature, together with the necessary resources (human, technical, and financial), management of change considerations, control procedures and organisational structure needed to implement these*” (p. 63).

This definition of ISP appears to be not much different from previous definitions of *strategic* ISP. However, Baker (1995) does illustrate that it is much more all encompassing, covering ISP that identifies strategic IS, management ISP (identifies effective IS), operational ISP (identifies efficiency IS) as well as tactical planning (inclusive of implementation planning). The essential difference, then, between ISP implied from this definition and previous definitions of SISP, is that in the Baker (1995) definition, IS applications to enhance effectiveness and efficiency are also identified - i.e., IS that indirectly influence organisational goals (see Figure 3.1). Figure 3.1 is an oft-used illustration (Yeates *et al.*, 1994) of IS classifications that Baker (1995) seems to have been alluding to in her definition. It is nevertheless flawed in this context, in that it does not convey the true meaning of the term *strategic* IS as defined earlier by Galliers (1993). It is possible for example, for even an operational IS to be strategic in that it might provide competitive advantage for the firm (Cerpa & Verna, 1998). "Strategic" IS as illustrated in Figure 3.1 is referring to what are also called executive IS by some. This anomaly is taken into account in the Baker (1995) definition, which recognises that an IS can be effective, efficient *and/or* strategic in nature.

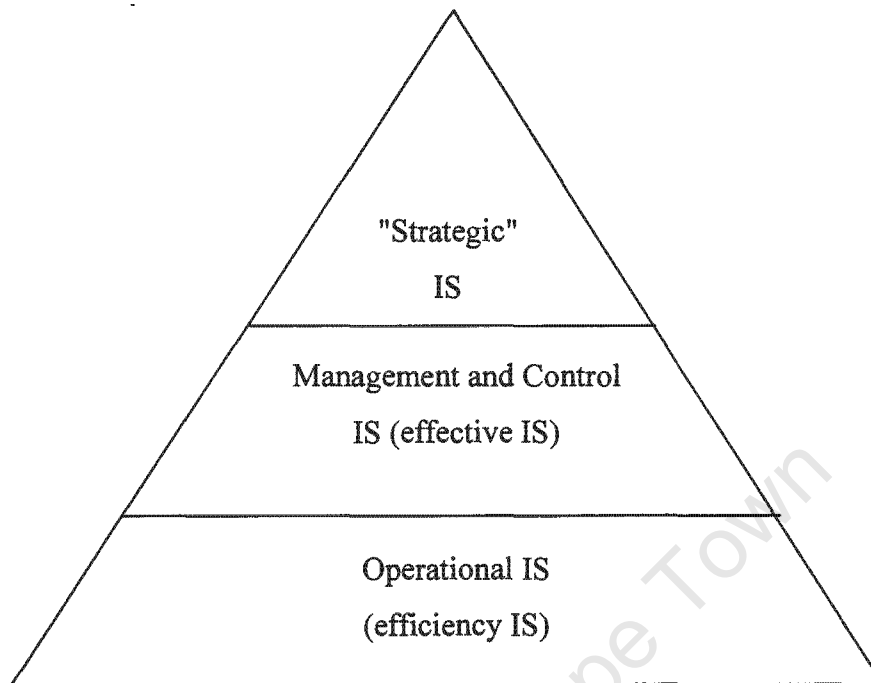


Figure 3.1: Levels of IS identified in ISP (derived from Baker 1995, Yeates *et al.*, 1994)

In attempting to distinguish between SISP and ISP, O' Connor (1993) notes that ISP can take place at three levels: strategic, tactical and operational (from McLean & Soden, 1977). Confusion between the terms SISP and ISP stems from the fact that much of the literature in this area fails to explicitly declare what level of ISP is being researched, with several studies on ISP implicitly referring to SISP. The blurring of the terms is also due to the increasing scope and complexity of SISP (Galliers 1991, O' Connor 1993, Segars *et al.* 1998), together with the now recognised need to address implementation issues at the strategic level (Lederer & Sethi, 1988). Plan implementation and the issues surrounding it have traditionally been the domain of tactical planning.

The differences between strategic, tactical and operational planning for IS, can be elucidated by examining each in terms of their scope, perspective, time frame and level of abstraction, as illustrated in Table 3.1.

Table 3.1: Comparison of ISP Levels (Segars *et al.* 1998, O' Connor 1993)

Context	Strategic	Tactical	Operational
Scope	Organisational	Broad - all Projects	Narrow - Individual Project
Perspective	Top Management (including IS Management)	Steering Committee/ IS personnel	IS Personnel/ User/management representatives
Time frame	3-5 years	1-2 years	12 months
Level of abstraction	Conceptual	Conceptual/ Physical detail	Physical details

A distinction can also be made between SISP and IS strategy formulation. The latter is concerned with aligning investment in IS with business goals and using IT for competitive advantage (Earl, 1993); or alternatively as identifying IS that will help support and/or influence organisational goals and objectives. There is thus less concern with infrastructure (IT strategy), and resource issues (Information Management Strategy). For some researchers, the separation between strategy formulation and implementation is seen as artificial, with the term strategy formation being used, reflecting the fact that that strategy emerges, rather than being rationally planned for (Baker, 1995).

This research focuses on the strategic level of ISP (SISP). Thus, the definition of ISP offered by Baker (1995) within the context described by Segars *et al.* (1998) best matches SISP as researched in this study - *i.e.*:

SISP involves the identification of prioritised information systems that are efficient, effective, and/or strategic in nature, together with the necessary resources (human, technical, and financial), management of change considerations, control procedures and organisational structure needed to implement these IS. The context of SISP is, in terms of scope - organisational, in perspective - that of top management, the time-frame - long (e.g., 3 - 5 years), and the level of abstraction - conceptual.

3.3 SISP Objectives

The discussion on definitions for SISP has revealed that SISP is largely concerned with aligning IT with business needs, identifying competitive advantage through IT, IT strategy formulation, information management strategy formulation and change management and implementation strategies (Earl 1993, Galliers 1991). More detailed objectives have also received research attention, especially since the success of SISP has often been conceptualised as the extent to which key objectives have been fulfilled (Lederer & Sethi 1996, Premkumar & King 1994, Segars & Grover 1998).

Objectives for carrying out SISP are both tangible and intangible, reflecting its multi-faceted nature (Baker, 1995; Premkumar & King, 1991). For example, the following key objectives have been identified (Clark *et al.* 2000, Conrath *et al.* 1992, Earl 1993, Lederer & Sethi 1996, Pavri & Ang 1995, Premkumar & King 1994):

- Alignment of IT with business needs and objectives.
- Greater exploitation of IS opportunities for gaining competitive advantage.
- Identification of new and higher payback IT applications.
- Identification of strategic IS applications.
- Development of an information architecture.
- Better planning and control of human, software, and hardware resources.
- Establishment of technology paths and policies.
- Better assessment of technology trends and better system investment decisions.
- Improved forecasting of IT resource requirements.
- Improved allocation of IT resources.
- Increase in IT budgets.
- Improved communications with top management.
- Increased top management commitment to IT.
- Better appreciation of the role of IS by users and management.
- Improved communications with users about IT.
- Increased visibility of IT in the organisation.

- Increased user cooperation.
- Increased user satisfaction with IS services.

Clark *et al.* (2000) note that planning traditionally had the high level general objectives of determination, organisation and communication. Whilst much of the traditional focus has been on determination and organisation, the SISP literature points to communication as being a key concern as well (Clark *et al.* 2000). Thus, improvements in communication and cooperation with managers and users often feature amongst the top objectives for IS planners (Conrath *et al.* 1992, Lederer & Sethi 1996, Pavri & Ang 1995). Heng & Newman (2001) similarly note that beyond the goals often espoused in the mainstream literature, SISP may be conceptualised as “a communicative, sense making and socio-cultural process, highlighting interpretive, communicative, ritualistic and sense making activities” (p. 2).

3.4 The State of SISP Practices

Several studies have investigated the state of SISP practice in different countries. Such studies were especially useful in the early days of SISP research. Galliers (1987) compared the practices in Australia with those in the UK, whilst Conrath *et al.* (1992) examined practices in Canada using a framework based on the work of McLean & Soden (1977) in the USA. Pavri & Ang (1995) subsequently replicated this study in Singapore, as did Teo *et al.* (1997).

Such studies typically examine a wide array of characteristics and activities performed by organisations when carrying out SISP. Characteristics examined include the type of methodologies used (*e.g.*, top-down versus bottom-up), the level of integration between business planning and SISP, the extent and breadth of stakeholder participation, the IS plan content, SISP objectives and their attainment, and the degree of satisfaction amongst stakeholders. Typically it has been found that it is mainly larger organisations that carry out SISP (Conrath *et al.* 1992, Pavri & Ang 1995), but that the number of organisations adopting this practice is increasing over time (Pavri & Ang 1995, Teo *et al.* 1997). Several of these studies have also looked at critical

success factors (Galliers 1987, Teo *et al.* 1997), as well as key problem areas (Flynn & Goleniewska, 1993).

3.5 Methodologies, Methods, Tools and Techniques

The terms method and methodology are often used interchangeably in IS research (Baker 1995, Introna & Whitley 1997, Checkland 2002). Baker (1995) for example refers to the techniques and tools for carrying out SISP as the methods, and to methodology as the sum total of methods and processes - processes being defined as the steps and activities undertaken to reach an outcome (Baker, 1995). Introna & Whitley (1997) see methodologies as “*a structured set of tools and techniques that are used to tackle a particular problem*” (p. 32), and methods as either a component of methodology at the level of tools and techniques, or an all-encompassing meta-term. Checkland (2002) interprets methodology as the *principles* upon which the method is based. Thus, wherever the term method or methodology is used, the meaning needs to be garnered from the perspective of the particular authors.

Methodologies, methods, tools and techniques will be abbreviated in this section to MMTTs, after the style of Kettinger *et al.* (1997) who abbreviated methods, tools and techniques to MTTs. Baker (1995) notes that much of the early research in SISP was focused on the derivation of MMTTs (*e.g.*, McFarlan *et al.* 1983, Porter & Millar 1985, Shank *et al.* 1985, Lederer & Putnam 1986). Very often, however, these were developed in the absence of a sound theoretical underpinning, and as a result there were reports of methodological problems, and plan implementation failures (Lederer & Sethi, 1988). Furthermore in a study by Lederer & Sethi (1996) none of the prescriptions relating to modelling, methodology or the use of consultants (who usually apply a proprietary or customised methodology) correlated highly with SISP effectiveness. This is perhaps an indication that MMTTs may be a necessary but not sufficient condition for IS planning and development (Introna & Whitley 1997, Lederer & Sethi 1998). Suffice to say, MMTTs continue to be prescribed, albeit, in some instances, from a more informed understanding of SISP (Galliers 1993, Min & Kim 1999, Ormerod 1996, Salmela & Spil 2002, Van Der Zee & De Jong 1999).

The criteria organisations may use for selecting a method or methodology for SISP include:

- A consideration of desired outcomes from its use
- An evaluation of known approaches
- A consideration of organisational context
- Organisational discussion and/or experience
- The IS Department preference
- Consultant advice
- Company policy
- Management style
- Whether capabilities such as CASE tools are provided

(Galliers 1987, Fink 1994, Lederer & Sethi 1992).

Research indicates that organisations may try several methods/methodologies over time (Earl 1993, Fink 1994). Furthermore, as they mature and gain experience in conducting SISP, there is evidence that in-house methodologies become more common (Lederer & Sethi 1996). These are normally derived from existing MMTTs, and tailored to suit the organisational context and/or management style (Cerpa & Verna 1998, Fink 1994, Premkumar & King 1991). A list of common MMTTs that have been used in SISP over the years is shown in Appendix 1. Further work can be done to group these in to a classification framework as was done by Kettinger *et al.* (1997) concerning business process change. This was, however, outside of the scope of this study.

3.6 Success Factors for SISP

Success factors for SISP have been investigated in Galliers (1991), Earl (1993) and Ang & Teo (1997) among others. Aggregating the findings from these studies resulted in the list shown in Table 3.2 below.

Table 3.2: Success Factors for SISP

Success Factor	References
Top management commitment	Galliers (1991)
Top management involvement	Galliers (1991), Earl (1993)
Top management support	Earl (1993), Ang & Teo (1997)
Middle management involvement	Galliers (1991)
Good user-IS relationships	Ang & Teo (1997)
ISP supported by IS management function	Galliers (1991), Earl (1993), Ang & Teo (1997)
Increased management understanding of IS/IT	Galliers (1991)
Business strategy available	Earl (1993), Ang & Teo (1997)
Business plans a basis for ISP	Galliers (1991), Earl (1993)
Anticipation of likely changes in IT	Ang & Teo (1997)
ISP outcomes/process debated by management	Galliers (1991)
ISP outcomes: Prioritised applications portfolio	Galliers (1991)
Assessment/evaluation of SISP	Galliers (1991)

Noticeably senior management involvement, commitment and support feature amongst the most important. This is probably because they ensure that SISP addresses the key priorities of top management, and relatedly they make sure that resources are made available for plan implementation. Excessive top management involvement can be a problem, however (Lederer & Sethi, 1988), and although organisation commitment has been shown to have a positive influence on SISP effectiveness, there is a threshold, after which further commitment may lead to decreased effectiveness (Basu *et al.*, 2002).

3.7 Problems in SISP

Key problem areas when conducting SISP have also received attention (Lederer & Sethi 1988; Teo & Ang 2001). Lederer & Sethi (1988) initially classified problems as resource-related, process-related or output-related. Further analysis revealed that these problems could be factored into 5 dimensions – organisational, hardware, database, cost, and implementation problems, respectively (Lederer & Sethi, 1991). Organisational problems were found to influence hardware, database and cost

problems, all of which then compounded plan implementation problems (Lederer & Sethi, 1992). Subsequent research on problems in SISP has drawn heavily from this work (Flynn & Goleniewska 1993, O' Connor 1993, McGrath *et al.* 1994, Teo & King 1999, Teo & Ang 2001). Table 3.3 illustrates the major problem dimensions and the items under each (Lederer & Sethi 1991).

Table 3.3: Critical Dimensions of SISP Problems (Lederer & Sethi, 1991, p. 113)

Organisational
The methodology fails to take into account organisational goals and strategies
The methodology fails to assess the current information systems applications portfolio
The methodology does not sufficiently involve users.
The methodology makes inappropriate assumptions about organisational size.
SISP output fails to provide a statement of organisational objectives for the IS Department.
Database
SISP output fails to provide priorities for developing specific databases.
SISP output fails to sufficiently address the need for data administration.
SISP output fails to determine an overall data architecture for the organisation.
Hardware
SISP output fails to include an overall organisational hardware plan.
SISP output fails to include an overall organisational data architecture for the organisation.
Cost
The planning exercise takes very long.
The planning exercise is very expensive.
Implementation
It is difficult to secure top management commitment for implementing the plan.
The final output document is not very useful.
The methodology fails to take into account issues related to plan implementation.
Implementing the projects and the data architecture identified in the SISP output requires substantial further analysis.
The methodology requires too much top management involvement.
The output is not in accordance with the expectations of top management.

3.7.1 Challenging Assumptions about SISP

Many of the problems in Table 3.3 above relate to inadequacies in carrying out specific methods and processes, and thus addressing them may result in improvement

through single loop learning (Argyris *et al.*, 1985). The more substantial issues that relate to the assumptions upon which SISP are based, however, would remain unchanged (Huysman *et al.* 1994). Dealing with these often tacit assumptions could lead to double loop learning and greater improvement in SISP. Hackney *et al.* (2000) go some way in this direction by identifying eight common assumptions that are made about SISP, and how these need to be questioned. Each of these will be briefly discussed:

Assumption 1: A business strategy exists

In many organisations business strategy is arrived at through emergence, and is continually adjusted in the light of environmental change (Hackney *et al.* 2000). Paradoxically, in order to develop an IT application some measure of stability is required (Hackney *et al.* 2000). Furthermore, it has been found that in some organisations a written business strategy does not exist except in the minds of executives (Reich & Benbasat, 1996). Where it does exist the strategy may be lacking in clarity and have goals that are politically coloured, multi-dimensional, and intangible (Sillince & Frost, 1995). These may be reasons for the problems related to identifying organisational goals and strategies alluded to by Lederer & Sethi (1988).

Assumption 2: Business Strategy can be aligned with IT strategy

Hackney *et al.* (2000) note that very often the business strategy itself is constrained by the legacy of IT systems, these being the results of previous SISP cycles. Thus, trying to align it with a new IT strategy requires first that the existing IT infrastructure be examined.

Assumption 3: IS strategy and business strategy are different

This assumption is reflected in the importance of business strategies being available as a basis for SISP, and ensuring linkage between the two (Galliers, 1991). Hackney *et al.* (2000) argue that IT is intrinsically linked to business success, especially in information-intensive industries, and is therefore very much at the core of strategy, not secondary to it.

Assumption 4: IT is a source of competitive advantage

The examination of objectives for SISP in Section 3.3 above reveals that the use of IT for competitive advantage is a key outcome expected from the process (Earl, 1993). Lederer & Sethi (1996), however, found that it was the objective least achieved through formal SISP. This may be because IT has become a commodity, and is thus a necessity rather than a competitive weapon (Hackney *et al.* 2000). Carr (2003) also argues that “IT doesn’t matter” in terms of competitive advantage. It needs to be recognised, however, that competitive advantage is achieved not through IT *per se*, but through its innovative deployment and management (Hackney *et al.* 2000, De Jarnett *et al.* 2004). Thus, much of the critique concerning the assertion that “IT doesn’t matter” (Carr, 2003) relates to the neglect of this important point.

Assumption 5: Strategic information systems exist

Hackney *et al.* (2000) succinctly make the point that “*the examples of strategic information systems (such as American Airlines and Thompson Tour Operators) in fact represent significant process capability that the organisation was able to harness mainly through communication technology. It is the process capability that is strategic to the business not the information system application*” (p. 9). So, in other words, the IS application specifically does not provide the strategic advantage, but the process capability that it enables.

Assumption 6: Strategic applications of IT are formally planned

Hackney *et al.* (2000) further note that many examples of strategic applications have emerged through implementation rather than being planned in a rational top-down manner. Thus, once again the objective of identifying strategic applications of IT through formal, rational, top-down planning methodologies needs to be questioned.

Assumption 7: SISP encourages organisational integration

One of the goals of SISP is to identify a prioritised application portfolio. Such a portfolio can paradoxically lead to organisational fragmentation rather than integration (Hackney *et al.*, 2000). Integration is very often only addressed at the technological level through the development of enterprise-wide information architectures (Hackney *et al.*, 2000).

Assumption 8: SISP works

The problems identified by Lederer & Sethi (1988) and the failures of formal, rational, top-down SISP methodologies raise questions as to their efficacy. Introducing adaptation, emergence and flexibility into the process has been found to lead to improvements (Segars & Grover 1999, Ciborra 1999).

3.8 SISP Approaches

In this section the means by which alternative approaches to SISP can be characterized and assessed are firstly addressed, before examining several alternative, non-mainstream approaches that are advocated.

3.8.1 Characterising alternative approaches

Possibly as a result of the failures and weaknesses of SISP methodologies, research in SISP has gradually shifted to more multi-dimensional studies on approaches (Baker, 1995). Several key studies have focused on characterising alternative approaches to SISP, where an approach is a more descriptive construct than methods, embodying several dimensions (Earl, 1993). Earl (1993), for example, described it as “*the nature and place of method, the attention to and style of process, and the focus on and probability of implementation*” (p. 7).

Segars *et al.* (1998) distinguished between alternative approaches in terms of the level of rationality and adaptation. Characteristics that were deemed to constitute rationality were comprehensiveness, flow (top down versus bottom up), focus (control versus creativity) and formalisation. Adaptation was described by the participation profile for SISP, and frequency of SISP meetings. Doherty *et al.* (1999) in a replication of the Segars *et al.* (1998) study included additional characteristics – locus of ownership for SISP (business or IS), the extent to which alignment is explicitly sought, the degree of focus on implementation, and the extent to which competitiveness from IT is sought. Other characteristics that are further identified from the literature include the level of integration between business planning and IS planning (BP-ISP integration) (Teo &

King, 1997), and alacrity (Lederer & Sethi, 1998). These characteristics and their definitions are displayed in Table 3.4 below.

Table 3.4: SISP Process - Characteristics (Segars *et al.* 1998, Doherty *et al.* 1999)

Characteristic	Definition
Comprehensiveness	The extent to which an organisation attempts to be exhaustive or inclusive in making and integrating decisions.
Flow	The locus of authority or devolution of responsibilities for strategic planning (top-down, bottom-up, interactive)
Focus	The balance between creativity and control orientations inherent within the strategic planning system.
Formalisation	The existence of structures, techniques, written procedures, and policies that guide the planning process.
Frequency	The frequency of planning activities or cycles, and, relatedly, the frequency of evaluation/revision of strategic choices (occasional vs. continuous).
Participation	The breadth of involvement in strategic planning (narrow vs. wide)
Ownership	The locus of ownership for the planning process (business/IS group/mixed)
Alignment	The degree to which alignment between corporate and IS strategies is explicitly sought.
Implementation	Focus during the planning process on the implications for implementation
Competitive focus	The range of benefits sought (primarily efficiency vs. wider benefits, including competitive advantage)
BP-ISP Integration	The level of integration between business planning and SISP (business-led, IT-led, reciprocal or full integration) (Teo & King, 1997)
Alacrity	The speed of the SISP process (Lederer & Sethi, 1998)

Each of the characteristics may vary, giving rise to a plethora of possible alternative approaches to SISP, based on patterns of variation along the characteristics. Earl (1993) identified through case studies of UK organisations five distinct approaches to SISP – business-led, method-driven, administrative, technological and organisational, respectively. The organisational approach was found to be the most successful (Earl, 1993). Using the characteristics suggested by Segars *et al.* (1998) (for the sake of parsimony) to assess this approach reveals that it had elements of rationality (medium to high on comprehensiveness; interactive with respect to flow, i.e., top-down and bottom-up; medium in terms of formalisation; and focused on both control and

creativity). It was also adaptive (fairly wide participation, and frequent SISP sessions as needed).

Segars *et al.* (1998) in their study of large commercial organisations in the USA found an approach that was high on rationality (high comprehensiveness and formalisation, top-down in flow and focused on control) and adaptation (broad participation profiles and frequent planning meetings) to also be the most successful. As with Earl (1993) they referred to this as an organisational approach. Doherty *et al.* (1999) in their UK study came up with similar findings – that an approach exhibiting rationality and adaptation, and best described as organisational was the most successful. It differed slightly from that of Segars *et al.* (1998), however, in that it was characterised by a focus on creativity rather than control. Salmela *et al.* (2000) found what they termed a comprehensive approach to be more successful than an incremental approach in the context of a turbulent environment. An assessment of this comprehensive approach reveals that it has somewhat similar characteristics to what Earl (1993), Segars *et al.* (1998) and Doherty *et al.* (1999) refer to as an organisational approach. Salmela & Spil (2002) subsequently derived a method incorporating both comprehensive and incremental practices to come up with an approach that was both highly rational and highly adaptive. A summary of the analysis of alternative approaches according to the characteristics suggested by Segars *et al.* (1998) is displayed in Table 3.5 below.

Table 3.5: Alternative SISP Approaches (after the fashion of Segars *et al.*, 1998)

Characteristic	Comprehensiveness	Flow	Focus	Formalisation	Frequency	Participation
Earl (1993) Approaches						
Administrative	High	Top down	Control	High	Low	Low
Business-led	Low	Bottom-up	Creativity	Low	Low	Low
Method driven	Medium – Low	Bottom up	Control	Medium – High	Low	Low
Organisational	Medium - High	Interactive	Control & Creativity	Medium - High	High	High
Technological	High	Top down	Control	High	High	High
Segars <i>et al.</i> (1998) Approaches						
Administrative	Low	Bottom up	Creativity	Low	Low	Low
Business-led	Low	Top down	Both	Low	Medium	Medium
Method-driven	Medium	Top down	Control	Medium	High	High
Organisational	High	Top down	Control	High	High	High
Technological	High	Bottom-up	Control	High	Low	Low
Doherty <i>et al.</i> (1999) Approaches						
Administrative	Low	Bottom up	Control	Low	Low	Low
Business	Low	Interactive	Creative	Low	High	Low
Organisational	High	Top down	Creativity	High	High	High
Systematic	High	Bottom up	Control	High	Medium	High
Salmela <i>et al.</i> (2000) Approaches						
Comprehensive	High	Top down	Control	High	Medium	High
Incremental	Low	Bottom up	Creativity	Low	High	Low

In summary there appears to be consensus that the most successful approach will be both rational and adaptive, and is best described as organisational. With such an approach, *comprehensiveness* is generally reported as being medium to high, as are the levels of *formalisation*. Sensitivity to the prevailing management style is required, however, given that in some cases this tends towards informality (Galliers, 1991). There are slight differences reported with respect to *flow*, with some researchers finding a top down flow (Doherty *et al.*, 1999; Segars & Grover, 1999) in the most successful approach, while others a more interactive flow (Earl 1993). Interestingly, though, those finding a top down flow also found there to be broad participation profiles, which takes account of the required bottom up elements necessary to ensure

plans are relevant, accepted and implemented. There are somewhat conflicting views on *focus* – Segars *et al.* (1998) showed a high control focus as being part of the most successful approach, whilst Doherty *et al.* (1999) found high creativity. Control may be necessary to ensure project budgets are realistic, and adhered to, whilst creativity allows for innovative applications for IT to be surfaced (Segars & Grover 1999). Thus having both orientations may not be a bad idea.

Salmela *et al.* (2000) provide evidence that organisational approaches are more successful within the context of a turbulent environment. Given that globally, all firms are generally enveloped by a turbulent business and IT environment, the success of rational adaptive approaches is most likely due to the fact that they are best suited to planning within such turbulence. In such environments purely rational approaches to planning suffer from lack of plan implementation, while purely incremental, adaptive approaches may result in plans insufficiently detailed to allow for implementation (Lederer & Sethi, 1992).

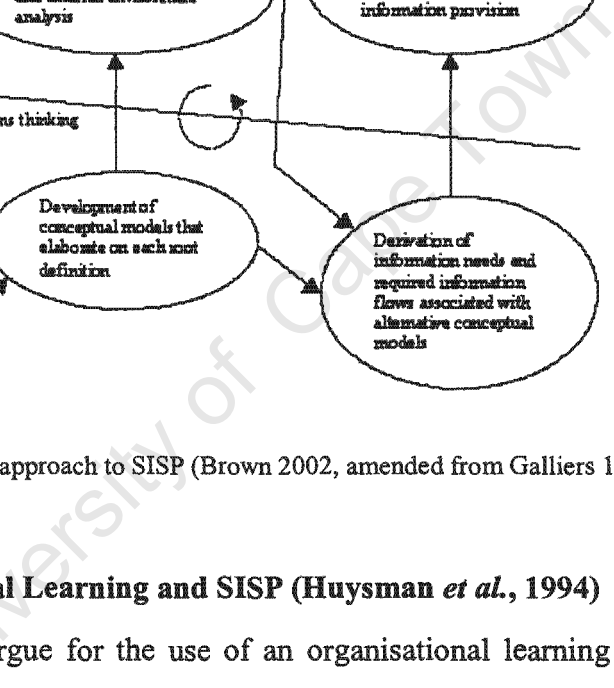
Detailed descriptions of how to carry out a particular approach have received little research attention. Some insight has, however, been given into the schools of thought underlying them (Segars & Grover, 1999). That which underlies rational adaptation is called the learning school. A few alternative, “non-mainstream” approaches to SISP, which seem to resonate with the learning school of thought are now discussed.

3.8.2 Soft Systems Thinking and SISP

The learning school of thought seems to bear some resemblance to the systems thinking approach to dealing with problem situations, as embodied in the soft systems methodology (SSM). The term methodology as used here is more akin to what Iivari *et al.* (1998) call an approach than it is to method or technique. They define an approach to be the set of goals, principles and concepts underlying methodology, consistent with the definition of methodology provided by Checkland & Holwell (1998). Galliers (1993) describes and illustrates an example of an SSM-based approach to SISP that incorporates these ideas. Using the Galliers (1993) model as a guide, a similar model was derived by Brown (2002), who incorporated the major

phases and stages expected of an SISP study (as suggested by Mentzas, 1997) into the SSM cycle.

The approach is *rational* in that it comprehensively examines alternative future scenarios through a process of discussion and debate, before a specific scenario or scenarios to develop further are chosen (Galliers 1993). Methods and techniques are suggested for use in the SSM cycle (*e.g.*, rich pictures, human activity modelling), and can be supplemented with more specific SISP techniques (*e.g.*, value chain analysis) as needed (Galliers 1993). The flow is top-down as the process is typically initiated by management, but at the same time bottom-up given that it advocates broad participation of all stakeholders (Brown, 2002). The focus is on both control and creativity. Control is evident in that a monitoring and control system is usually included when developing human activity models in SSM. Creativity is encouraged through debate, and through the generation of several root definitions based on alternative worldviews (Brown, 2002). *Adaptation* is evident in that frequent iterations between stages are advocated, as well as a continuous learning process, such that once a planning cycle is complete, both the process and outcomes of the study are evaluated, and these results fed back into the next planning cycle (Galliers 1991, Baker 1995). Broad participation of all major stakeholders is furthermore a key characteristic of the approach, which is illustrated in Figure 3.2 below.



3.8.3 Organisational Learning and SISP (Huysman *et al.*, 1994)

Huysman *et al.* (1994) argue for the use of an organisational learning approach to SISP. As its name implies, such an approach would have as the underlying school of thought learning (Segars & Grover 1999). The whole notion of systems thinking is closely related to organisational learning, and so an organisational learning approach may exhibit characteristics similar to the systems thinking- based approach described above (Senge 1990, Galliers & Baker 1995).

Huysman *et al.* (1994) investigated the concept of organisational learning from the perspective of experiential learning and innovation theory. The manner in which the SABRE American Airline reservation system emerged as a tool for competitive advantage was seen as an example of what can be achieved when experiential learning is coupled with innovativeness (Huysman *et al.* 1994). This system, they assert, was

neither accidental nor derived from grand plans or visions. Through hands-on experience with the base technologies, trial and error, and evolutionary improvement American Airlines managed to develop the SABRE system. Such success furthermore was not easy to replicate for other organisations that had not been through the same experiential process (Huysman *et al.*, 1994). According to Huysman *et al.* (1994), the implications of applying this perspective of organisational learning to SISP, are that:

- Formal rational planning and informal bottom-up aspects of SISP should be closely intertwined activities.
- The role of IS planners should be to facilitate the planning process, and that of external consultants should be restricted to advising and trouble shooting.
- IS plans should be seen as draft documents subject to change, in order to accommodate the fact that organisations learn by doing, and as a consequence need to have adaptable planning processes.
- Meetings should be held frequently to discuss and modify the draft plan during the planning period.
- Several IS projects aimed at meeting the same objective should be conducted simultaneously.
- These projects should be loosely controlled to allow for creativity and innovation to flourish.
- Some projects may fail, and this should be recognized as part of the chosen strategy.
- Success should not be evaluated on the basis of one project, but on the aggregate.

Overall such an approach exhibits some *rationality* in that formal top-down planning is still seen as necessary, but within an *adaptive* environment where there are frequent meetings to discuss draft plans, loose control to allow for creativity, and where informal bottom-up elements are integrated with top-down directives. This corresponds closely with the organisational approach to SISP outlined by Earl (1993), although the focus on creativity at the expense of control is at odds with the organisational approach of Segars & Grover (1999), which has a focus on control.

3.8.4 SISP – An Improvisational Perspective (Ciborra, 1999)

In general improvisation is recognised as typically occurring in emergency situations, where standard routines and norms may not be applicable in an atmosphere of turmoil and upheaval (Ciborra, 1999). Closer examination of organisational life reveals that even in hierarchical, formalised organisations, where everything appears to be stable, well structured and routinised, improvisation is more often the norm than the exception. People often have to *play it by ear, think on their feet, take things as they come, and make it up as they go along*, all reflecting improvisation (Ciborra, 1999). The dynamism, turbulence and rapid pace of change in the global marketplace makes this way of working almost a necessity.

Ciborra (1999) defined improvisation as “*situated performance, where thinking and action occur simultaneously and on the spur of the moment. It is purposeful human behaviour, which seems to be ruled at the same time by chance, intuition, competence, and outright design*” (p. 137). The key dimensions of improvisation in organisations are situatedness, resources for improvisation, communication and shared context, and reflection and learning (Ciborra, 1999). Concerning IT Ciborra (1999) asserts:

“To be sure, (smart) improvisation is an intriguing process as far as IT is concerned. For one thing, it shows contradictory features. In a slow motion, after the fact analysis, one could trace in its dynamics the ingredients germane to rational decision-making: goal definition, information-gathering, planning, choice, and so on... Improvisation is simultaneously rational and unpredictable; planned but emergent; purposeful but opaque; effective but irreflexive; discernible after the fact, but spontaneous in its manifestation” (p. 137).

Interestingly, it can therefore be inferred from this statement that SISP performed in an improvisational manner will exhibit characteristics of both rationality and adaptation – the approach to SISP found to be the most successful. The underlying school of thought underpinning rational-adaptation is the learning school (Segars & Grover, 1999). The core belief of the learning school is that strategic planning is an

emergent process (Segars & Grover, 1999). Ciborra (1999) similarly contends concerning improvisation that:

“the design of strategic information systems ought to be based on the systematic appreciation and nurturing of *emerging* practices of *improvised* serendipitous development and use of computer-based information systems (IS). Furthermore, *planning* for IT applications would entail the solicitous management of those *learning* processes which turn *emerging*, idiosyncratic applications into strategic resources and core competencies of the organisation” (p. 137).

The repeated reference to emergence and learning in this statement highlights the congruence between improvisation and the learning school of thought. Indeed, the themes of experiential learning, experimentation, emergence, innovation, improvisation and the paradoxical notion of rational-adaptation have permeated much of the discussion on what constitutes the most successful SISP. Such concepts provide a strong challenge to the orthodox views on planning for information systems, given the appropriateness of planning-as-learning under conditions of uncertainty, dynamism, turbulence, and volatility. The latter are apt descriptions of the environment in which many organisations find themselves today.

3.8.5 A Structural View of SISP (Lamprecht & Roode, 1999)

Giddens' (1984) structuration theory has recently been employed in several information systems studies. Indeed, Lamprecht (1997) devoted a whole doctoral thesis to the reconceptualisation of SISP from a structural perspective. Lamprecht & Roode (1999) give a brief overview of structuration theory, noting that:

“The theory of structuration Giddens (op.cit.) aims at transcending the classical dualism between the social subject and object, core to the so-called orthodox consensus in social theory, as a duality – the duality of structure and agency. According to this duality, structure represented as rules and resources is at the same time the medium and outcome of social action. Central to structuration theory figures the knowledgeable agent. Giddens proposes a stratification model of the agent. In this model the reflexive monitoring of action is distinguished from the rationalization and motivation of action. All social action has

unintended consequences which become the unacknowledged conditions of further action.” (p. 5).

They further highlight the differences between orthodox IS planning methods and SISP from a structurational perspective as shown in Table 3.6 below.

Table 3.6: Orthodox versus Structural perspective of SISP (Lamprecht & Roode, 1999)

Orthodox SISP	Structurational Perspective
Discursive formulation of theory regarding future IS use.	Largely carried out in practical consciousness – formulation must take place on a practical level in action.
The planning process is separated into two distinctly separate planning and implementation phases.	IS planning cannot be separated from IS use. The duality of structure indicates that both elements are mutually constitutive.
Normally conducted in a top-down or bottom-up way.	Through the structuration process in lieu of the duality of structure constitution in both directions is happening at the same time.
Planning is normally a discrete and once-off activity, e.g. for the next 5 years.	Planning occurs as an ongoing emergent process as part of the routines of daily organisational life.
Gaining strategic advantage through IT is a core objective.	The efforts of the individual agent have an effect on larger social systems through axes of structuration.
Largely ignores the role of the individual agents or users of the information systems.	The constitution of IS strategy as rules and resources and structural properties of social systems depends on the agency of the individual agents.
SISP is an attempt at instrumental control, i.e., achieving higher organisational efficiency.	SISP is the ongoing process of reflexive self-regulation by agents (IS users) of the structurational process of IS use (social systems production).
New social structure can be created and built into information systems	IS are instantiated as rules and resources (social structure). Social structure is produced and reproduced out of what already exists in the continuity of social practices.
Full control over the SISP process is assumed and successful implementation is unproblematic and guaranteed.	Because of the bounded nature of human agency and the fact that action has unintended consequences which become unacknowledged conditions of further actions, the intended outcomes of the exercise can by no means be guaranteed.
Concentrates in its totality on social collectivities such as the organisation, its competitors, the IS department – largely ignores the individual agent.	Both structure and the individual agents are of equal importance; they are mutually constitutive.

The implications for practice of adopting this structurational view are outlined by Lamprecht & Roode (1999, pp. 30 – 34), and are summarized as follows:

Information systems and organisations need to be viewed as social systems rather than functional units and objects. Individual IS users or agents should therefore play a central role in SISP, *“as it is through the actions of the individual agents that IS are constituted as social structure”* (Lamprecht & Roode, 1999, p. 31). They should be practically involved in the SISP process, given their *“vast knowledge and skills of the practical accomplishments of reproduced practices”* (Lamprecht & Roode, 1999, p. 30). Whilst the role of the individual agent has been emphasized SISP should also draw upon the mutual knowledge of IS users, as *“without shared mutual knowledge and mutually shared interpretive schemes, communication of meaning would not be possible”* (Lamprecht & Roode, 1999, p. 33). Ultimately, SISP should aim to increase IS users’ agency (knowledgability), and allow the theorizing about IS at a discursive level (plan formulation) to become part of the agents’ theories in use. SISP from a structurational perspective is therefore closely linked to learning at a local rather than organisational level and should therefore be highly practical in nature.

SISP and IS use are closely intertwined and should be viewed as *“one emergent social process”* (Lamprecht & Roode, 1999, p. 30). The notion of a separation between plan formulation and implementation is recognized as artificial and thus discarded. Furthermore, SISP *“should be managed as one continuous and emergent social process which is embedded within the routines of organisational life”* (Lamprecht & Roode, 1999, p. 31). Plans should play a secondary role, and greater emphasis should be placed on formulation and implementation. SISP, then, is not a discrete event with a beginning and end, but has an ongoing flow, given it is part of the process of IS use.

The role of IS professionals and consultants is not to attempt control IS use, but to *“play a facilitative role in the SISP process making their knowledge of IS and technology accessible to the users of the system”* (Lamprecht & Roode, 1999, p. 32).

Several characteristics of this structurational view of SISP are similar to the rational-adaptive or learning approach to SISP. For example, the view of planning as learning

the emergent nature of SISP, and the acknowledgement that plan formulation and implementation activities are seamlessly integrated. The ongoing process suggested would also mean that such an approach rates highly in terms of frequency of planning (Segars & Grover 1999). The central role of the user and the need for shared interpretive schemes imply broad participation profiles. All these are attributes of a highly adaptive process.

Traces of rationality are evident in that the process is seen as simultaneously top-down and bottom-up. Formalised rules and procedures may be followed, but only in the context of the routines of daily organisational life. A focus on control, however, is not advocated, as it is believed "*the reproduction of social systems cannot be controlled as a purposive project by individual users*" (Lamprecht & Roode, 1999, p. 32). Comprehensiveness in the selection of alternative courses of action, and in the making of decisions is not so much at the discursive level, but at the level of practical consciousness. Thus, there are some similarities with the improvisational perspective of SISP, where thought and action are seen as occurring simultaneously (Ciborra, 1999).

The role of IS planners and consultants is seen as being to facilitate the process. This is consistent with their perceived roles in the systems-based approach, the organisational learning approach, and improvisational approach.

3.9 I-P-O Model of SISP and Meta-Analysis

Mainstream SISP studies have theoretically conceptualised SISP in terms of an input-process-model, or system (Lederer & Salmela, 1996). The major dimensions should be, as in any system, inputs, process, outputs and feedback. Lederer & Sethi (1988) in considering the problems of implementing SISP methodologies allude to three dimensions of problems: resource-related, process-related, and output-related - implying three dimensions in the SISP system (input, process, and output). The output dimension includes issues relating to plan implementation (Figure 3.3 below).

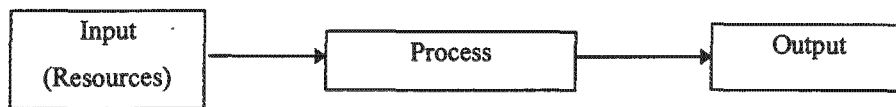


Figure 3.3: ISP Model implied from Lederer & Sethi (1988)

A similar model is proposed by Ang *et al.* (1995) based on their study of three Singaporean companies. The model (Figure 3.4) identifies inputs as the extent to which corporate objectives are incorporated into the IS plan, and the underlying motivation that is driving the firm to undertake the SISP study. These two inputs act together to determine the maturity level of the firm, which is the input into the planning process. This process consists of the actual planning methodology, and the output is then the set of IT investment priorities, together with the tools that will be used to measure the plan effectiveness.

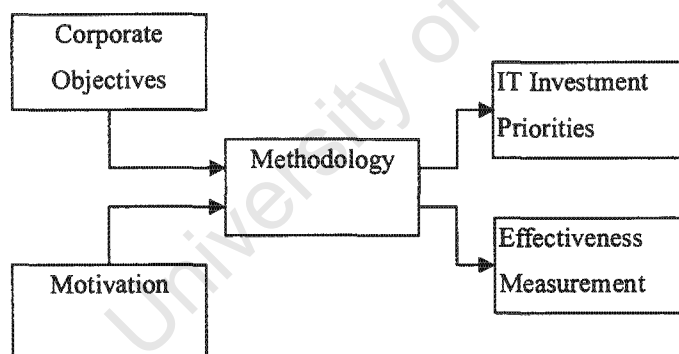


Figure 3.4: IS Planning parameters (Ang *et al.*, 1995)

Premkumar & King (1991) in the same vein, provide empirical evidence for an ISP system consisting of informational input and resources as the inputs into the planning process, the process itself, planning output, outcomes (organisational impact, functional impact and planning effectiveness) and organisational/external environment. Mentzas (1997) also includes in this model stakeholder education and training (see Figure 3.5).

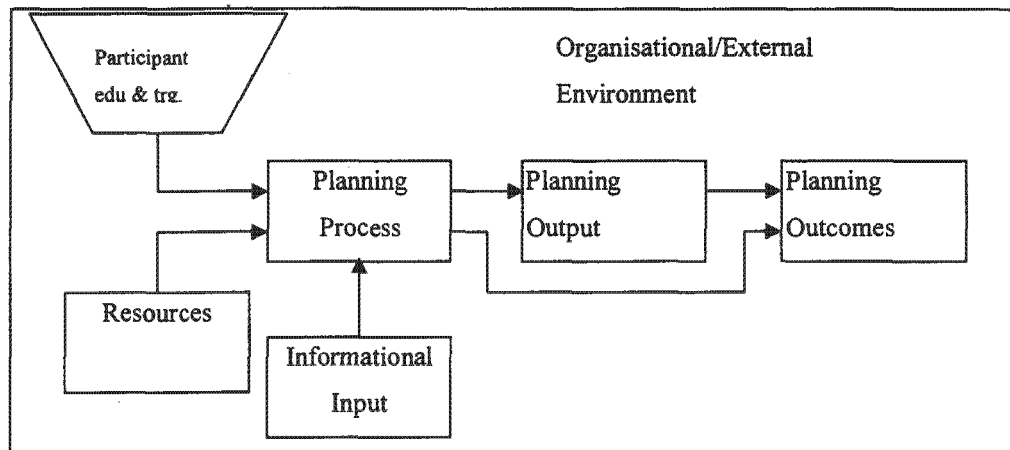


Figure 3.5: ISP Model adapted from Premkumar & King (1991) in Mentzas, 1997

Flynn & Hepburn (1994) make use of a SISP reference model by Ward *et al.* (1990) in examining the approach to SISP adopted by a UK metropolitan council. This model as shown in Figure 3.6 below, illustrates SISP as a two-stage process, where the first stage (planning for planning) sets the stage for the subsequent major planning stage, which produces a strategic plan with three major components: IS strategy, IS/IT management strategy and IT strategy. Various inputs into the planning processes, as well as influencing factors are also shown.

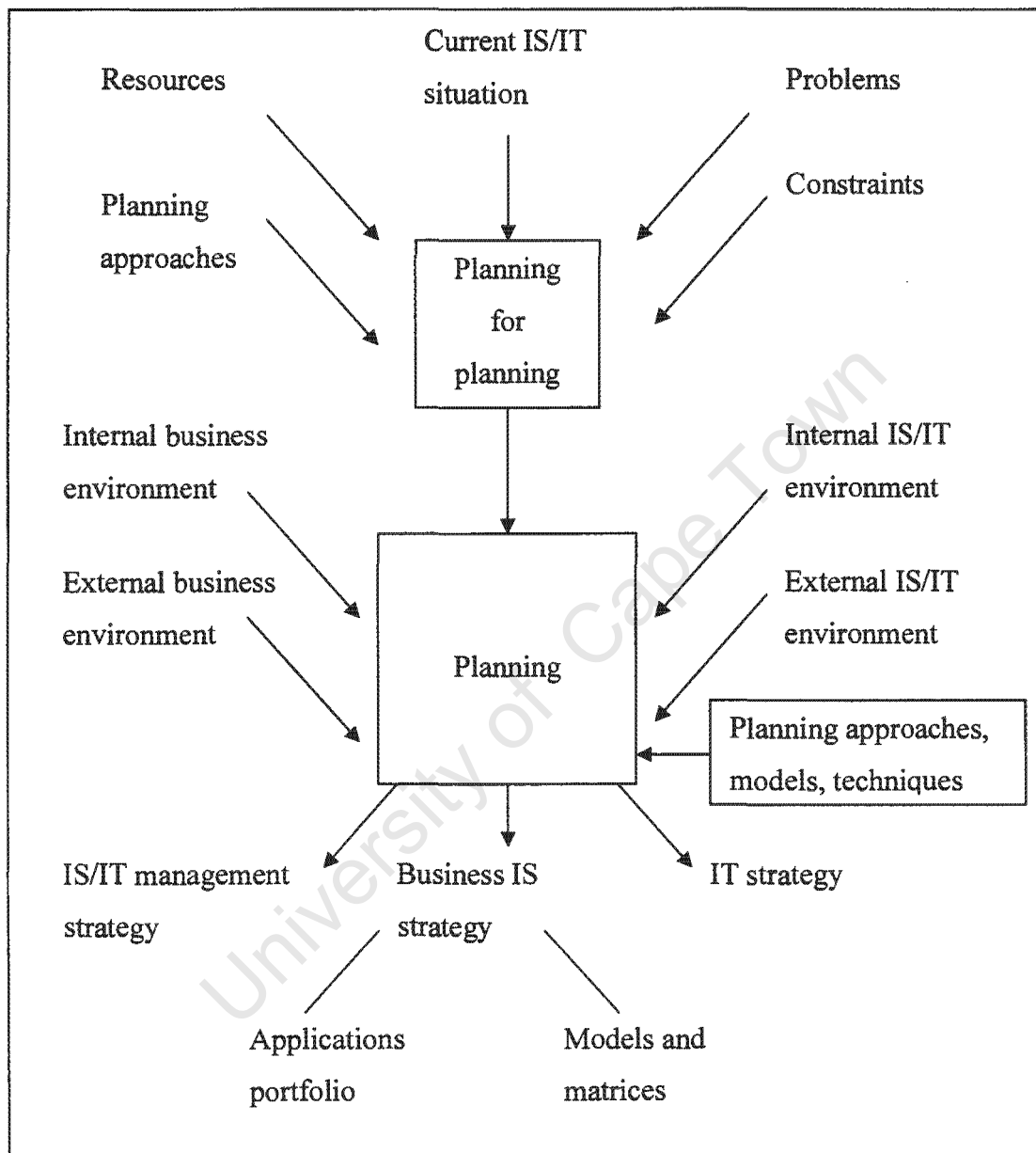


Figure 3.6: ISP Reference Model from Ward *et al.* (1990) - in Flynn & Hepburn (1994)

Baker (1995) provides a comprehensive process model of the ISP system identifying dimensions of input, process, method, methodology (method and process), implementation, output, outcomes and context. The concept of feedback, an important mechanism in any system, but somehow overlooked in previous studies is also accounted for. Two feedback mechanisms are identified- one during plan

formulation/formation, and the other, feedback on the ISP system (Figure 3.7). The outcomes dimension is considered evaluative, measuring how successful the ISP system has been. One such outcome measure is ISP effectiveness, defined as the extent of fulfilment of key planning objectives (Premkumar & King 1991, Baker 1995).

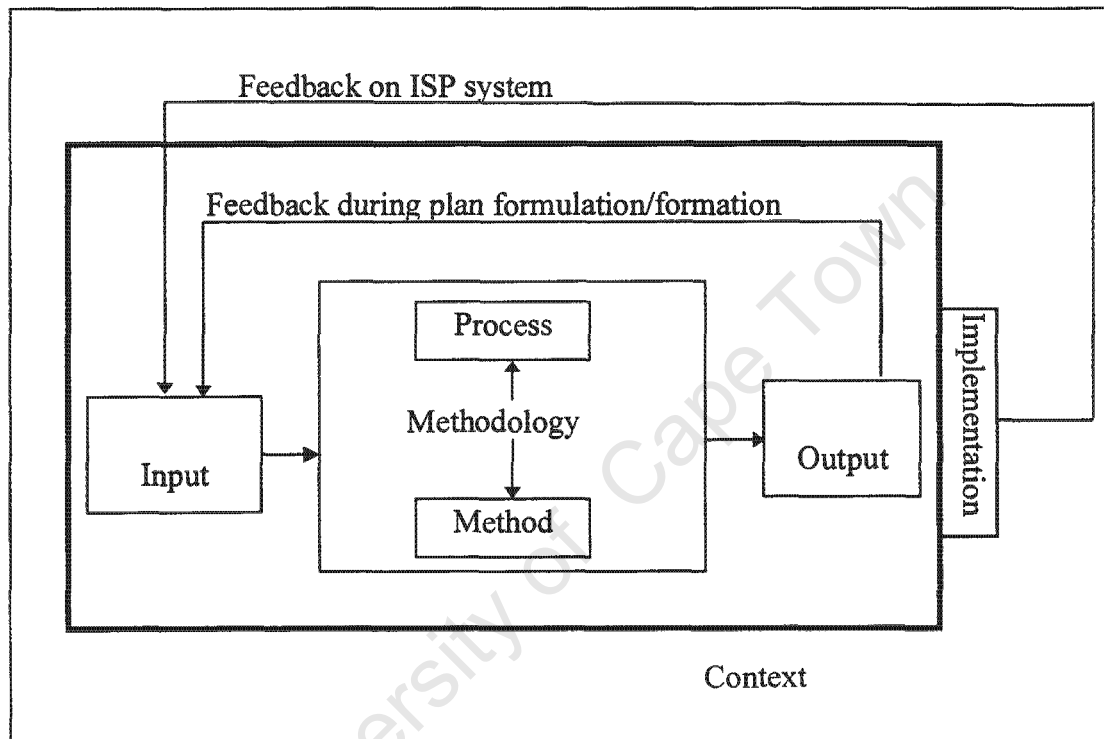


Figure 3.7: Feedback in ISP (from Baker, 1995)

Lederer & Salmela (1996) after consideration of much of the mainstream literature, recommended that an input-process-output variance model form the basis for a theory of SISP, which includes the components of external environment, internal environment, planning resources, planning process, information plan, plan implementation, and plan alignment as shown in Figure 3.8 below. As they pointed out “*the study of SISP is hampered by the absence of a theory that describes it*” (Lederer & Salmela, 1996, p. 238) hence the reason for the formulation of their theory.

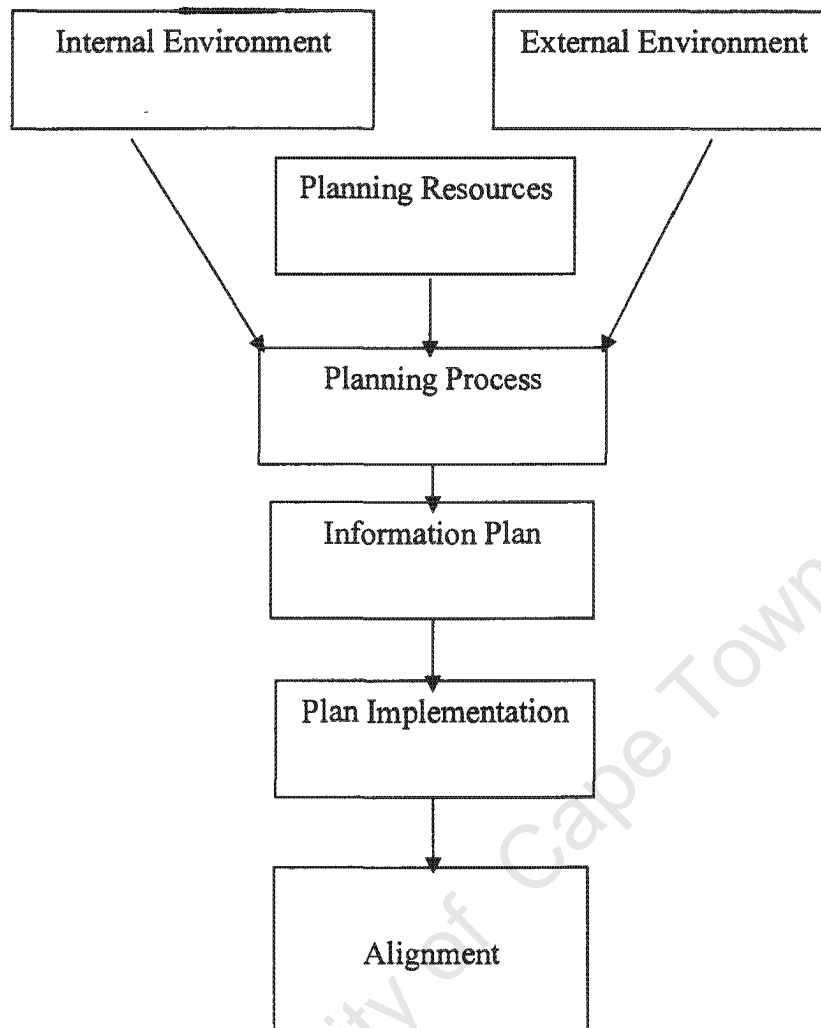


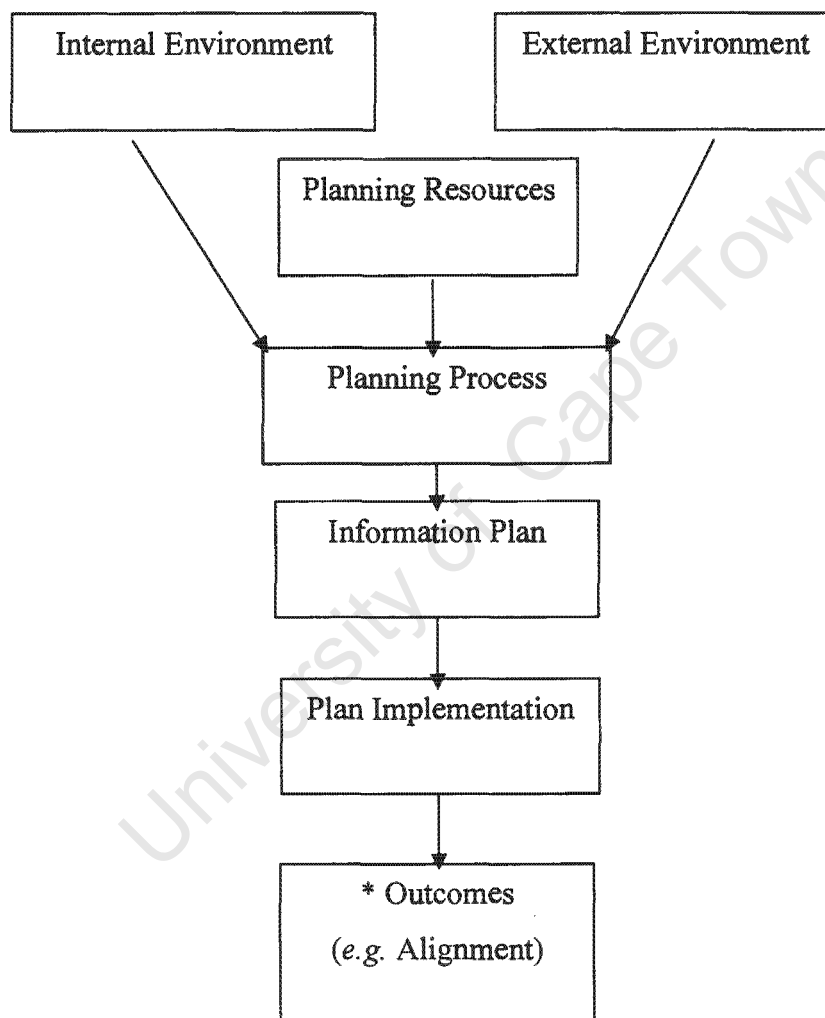
Figure 3.8: A theory of SISP (Lederer & Salmela, 1996)

3.9.1 Theoretical Framework for SISP Meta-Analysis

Prior to determining the research agenda for this study, a meta-analysis was conducted as a means of assessing and understanding the state of SISP theory. The details of the meta-analysis are included in the thesis, as the shortcomings of this approach informed the research objectives.

The Lederer & Salmela (1996) model was chosen as the basis to conduct the meta-analysis, given that it provides a parsimonious way of viewing SISP, whilst also providing a clear set of hypotheses to be tested (see Table 3.7). It therefore serves as a useful framework, as it allows for simple classification of studies. It also embraces all the other conceptualisations of SISP encapsulating them into one or more planning

categories or relationships. By determining to what extent the categories have been studied and operationalised, and to what extent relationships (hypotheses) have been tested, areas for further research can be identified. Some modification of the framework was required in that the Alignment category was changed to Outcomes in this study. Alignment, although being the most common outcome measure, is only one of several ways in which SISP effectiveness has been measured (see Figure 3.9).



* Depicted as Alignment by Lederer & Salmela, but changed to Outcomes here to accommodate the other alternative outcome measures that have been used in SISP research.

Figure 3.9: A theory of SISP (Amended from Lederer & Salmela, 1996)

3.9.2 Definitions of Components within the SISP System

Definitions for the components in Figure 3.9 are provided below. These aim to be as broad as possible, so as to enable inclusion of all likely factors into this framework:

External environment: This can be defined as the sum total of factors external to the organisation(s) conducting SISP that may have an impact on the SISP system (modified from Lederer & Salmela, 1996). This component can be divided into two major sub-components – external business environment, and external IT environment (Pant & Hsu, 1999). Environmental uncertainty is an example of a factor within this domain that has been examined in the context of SISP (Teo & King, 1997), with one study specifically looking at whether a comprehensive or incremental planning process is more effective in a turbulent environment (Salmela *et al.*, 2000).

Internal environment: This is defined as the sum total of factors within the organisation(s) conducting SISP that may have an impact on the SISP system (modified from Lederer & Salmela, 1996). Once again this component can be divided into internal business environment, and internal IS environment (Pant & Hsu, 1999). Examples of factors examined within this component include organisation size, role of IS in the organisation, and quality of strategic business planning, among others (Premkumar & King, 1994).

Planning resources: Resources, of whatever nature (typically informational, human, financial and technical), required for carrying out the planning process make up this component (modified from Lederer & Salmela, 1996). Examples of resources include top management input and involvement as well as user input and involvement (Premkumar & King 1994, Basu *et al.* 2002).

Planning process: The planning process is defined by the set of steps for developing a strategic information plan, paying heed to the methods to be used, style of process (process characteristics), and implementation issues to be addressed (Earl 1993, Doherty *et al.* 1999). The process is at the core of SISP, converting inputs into outputs (Baker, 1995). It is normally accomplished by employing a formal methodology that

details the phases, stages and activities to be carried out (Mentzas, 1997). However, just as important is the way in which the process is carried out, as the process characteristics have a major bearing on the ultimate success of SISP (Segars *et al.*, 1998). For example, the extent to which the business planning and SISP processes are integrated (BP-ISP integration) is a key success factor (Teo & King, 1997).

Information plan: The tangible outputs of the SISP process are detailed in the information plan (Lederer & Salmela, 1996). The plan content will be, as expected, very closely related to the methodology employed in the process (Bergeron *et al.*, 1991). Nevertheless, a typical plan will contain, amongst other things, a portfolio of applications to be implemented together with priorities (Agarwal *et al.*, 1994), as well as an overall information architecture for the organisation (Periasamy & Feeny, 1997).

Plan Implementation: The rate, extent and performance of plan implementation is how this component has been operationalised (Gottschalk, 1999a). Its importance cannot be overstated, as without plan implementation, the whole planning exercise may be thrown into question.

Planning Outcomes (primarily Alignment): Planning outcomes have typically been operationalised as the extent to which key planning objectives have been fulfilled (Premkumar & King 1991, Baker 1995, Lederer & Sethi 1996). *Alignment* of IS plans and objectives with business plans and objectives has often been the major objective of SISP, and thus was illustrated as the ultimate outcome in the Lederer & Salmela theory. That it be represented as an outcome is supported by the work of Reich & Benbasat (2000). Segars & Grover (1999), however, identify the extent of *analysis*, level of *cooperation* achieved, and improvement in *capability* as key SISP objectives too. Thus, in order for this component to be inclusive of all possible outcome measures that have been used in SISP studies, it has been renamed in Figure 3.9 from *Alignment* to *Planning Outcomes*.

Relationships between these components were captured by Lederer & Salmela in the form of hypotheses as displayed in Table 3.7. It is recognised that there are other indirect and contingency effects that may also be studied, in addition to these

hypotheses, and identification of these is probably the main contribution of this meta-analysis. They will be discussed in further detail in Section 3.9.3.

Table 3.7: SISP Hypotheses (Amended from Lederer & Salmela, 1996)

H1	A more stable external environment produces a more effective and efficient planning process [“The stability and predictability of industry, government, and economics appear to promote SISP”. Lederer & Salmela (1996, p. 242)]
H2	A simpler internal environment produces a more effective and efficient planning process. [“Greater predictability and simplicity in the internal environment appear to promote SISP”, Lederer & Salmela (1996, p. 244)]
H3	More extensive and higher quality planning resources produce a more effective and efficient planning process. [“Resources is the most significant variable to be associated with the two planning dimensions” - planning process quality and planning effectiveness respectively, Premkumar & King (1994, p. 96)]
H4	A more comprehensive planning process produces a more useful information plan. [“A planning process of higher quality produces a plan of higher quality” Premkumar & King (1991) in Lederer & Salmela (1996, p. 246)]
H5	A more useful information plan produces greater plan implementation. [“There is a significant relationship between (plan) content characteristics and IT strategy implementation”, Gottschalk (1999b, p. 115)]
H6	Greater plan implementation produces more positive planning outcomes (e.g., better alignment). [“By implementing projects according to comprehensive strategic plans, organisations validate the usefulness of the plan and should thus achieve better alignment”, Lederer & Salmela (1996, p. 248)]

3.9.3 Qualitative Meta-analysis

Using the modified Lederer & Salmela (1996) theory as depicted in Figure 3.9 and Table 3.7, a qualitative, and then quantitative meta-analysis of SISP literature were conducted. In order to collect data, a comprehensive search for articles on SISP was made on library and journal databases by using key word searches, and looking at titles. The contents of articles were also examined in order to ascertain whether they discussed any aspect of SISP as defined in section 3.2. Since the purpose of the meta-

analysis was to analyse SISP from a research perspective, only articles from peer-reviewed research journals were identified. Conference papers were not included, as in many instances studies reported in leading conferences were later published in journals (e.g., Periasamy 1993 and Periasamy & Feeny 1997; Kearns & Lederer 1997 and Kearns & Lederer 2000; Finnegan *et al.* 1997 and Finnegan *et al.* 1999). Research papers describing studies of an empirical nature were the main target of selection. The scope of the study was further limited to SISP studies published between 1991 and 2002, thus excluding studies prior to 1991. A quick review reveals that the majority of studies prior to 1991 were either conceptual in nature, or focused on methods and techniques for carrying out SISP. Some major empirical studies done before 1991 were also reported on in articles published after 1991 (e.g., Lederer & Sethi, 1991).

In total, 137 (67 quantitative) articles identified as being on SISP were found, and formed the basis for further analysis. This is by no means the complete set of articles on empirical research in SISP that have been published since 1991. To determine a complete set would require a thorough search through all possible peer-reviewed journals and conferences in which SISP studies might be published. This was not within the scope of this analysis, and the articles identified were deemed to be sufficiently representative, given that they were taken from 33 different research journals in both the information systems and management fields. They are also based on studies done in 20 different countries.

i Sources of Data for Meta-Analysis

The journals from which articles were gathered and their ranking in terms of number of contributions are displayed in Table 3.8. They include highly ranked IS journals (e.g., Information and Management) (Lowry *et al.*, 2004), as well as some of the major management science journals (e.g., Decision Sciences).

Table 3.8: Sources of Articles –Journal Sources

Journal Title	Frequency
Information & Management	24
International Journal of Information Management	17
Journal of Strategic Information Systems	13
Decision Sciences	10
European Journal of Information Systems	9
Journal of Management Information Systems	9
Long Range Planning	8
Information Systems Research	6
MIS Quarterly	6
OMEGA	4
Journal of Information Systems	3
Communications of the AIS	2
INFOR	2
Information Resources Management Journal	2
International Journal of Technology Management	2
Journal of the Operational Research Society	2
Logistics Information Management	2
American Review of Public Administration	1
Australian Computer Journal	1
Business Quarterly	1
Computer Journal	1
European Journal of Operational Research	1
Information and Software Technology	1
Interfaces	1
International Journal of Electronic Commerce	1
Journal of End User Computing	1
Journal of General Management	1
Journal of Global Information Technology Management	1
Journal of Information Science	1
Journal of Information Technology	1
Journal of Systems and Software	1
Management Science	1
South African Computer Journal	1

For each article a full text review was in most cases necessary in order to gather the required data on the components being examined, and the relationships between them. The criteria for determining whether an article addressed a specific component did not take into account the extent to which the component was addressed, but simply assessed whether any aspect of the component was studied. Whilst Lederer & Salmela (1996) undertook a similar analysis to come up with the theory in Figure 3.8 and Table 3.7, this analysis is different in several ways. Firstly, it includes a different set of sample articles, with many published after the Lederer & Salmela (1996) study. Secondly, it also investigates other relationships not specified by the theory in Table 3.7. Thirdly, it offers a different interpretation of the literature, given it adopts more rigorous definitions for categories and is analysed by a different author. Finally, this study quantifies the extent to which categories and relationships have been studied, and also includes a quantitative meta-analysis.

ii Analysis of Components within the SISP System

The extent to which each component has been researched is depicted in Table 3.9 below. This extent is determined by counting the number of articles that address each of the components depicted in Figure 3.9, and calculating this as a percentage of the total number of articles examined (137). Some articles address more than one of these components and so may be counted several times.

Table 3.9: Components Researched

Component	<i>Frequency</i>
Planning Process	115 (84%)
Planning Resources	71 (52%)
Planning Outcomes	66 (48%)
Internal environment	62 (45%)
Information plan	35 (26%)
External environment	26 (19%)
Plan Implementation	10 (7%)

ii. (a) Planning Process

The process is at the heart of SISP and thus forms part of the research in 84% of the studies. The process has been defined very broadly to encompass formulation and implementation planning activities, planning characteristics, and methods and techniques for carrying out the process. This is reflected in the factors investigated within this component, which can be classified fairly easily as those examining planning activities (inclusive of methods and techniques), or planning characteristics. Planning approaches arise as a result of the co-alignment between planning characteristics (Segars *et al.*, 1998), and so articles examining approaches can be classified together with those under planning characteristics. Mentzas (1997) provides a novel way of classifying the many process activities carried out in SISP, by organising them at the highest level into phases. Phases can then be broken down into stages, which can be further broken down into modules of activities. Table 3.10 shows a set of process phases and stages amended from Mentzas (1997).

Table 3.10: SISP Process - Phases and Stages (Brown 2002, Mentzas 1997, Galliers 1993)

SISP Phases	SISP Stages
Preparation	Planning for planning (pre-planning).
Organisation analysis	Analysis of internal business environment. Analysis of internal IS environment.
External environment analysis	Analysis of external business environment. Analysis of external IS environment.
Strategy conception	Scanning the future. Identification of alternative scenarios including information flows and requirements for each. Scenario elaboration.
Strategy formulation	Formulation of agreed organisational recommendations. Formulation of information architecture. Synthesis and prioritisation of portfolio of information systems to be developed.
Strategy implementation planning	Definition of action plan elements. Elaboration of action plan. Definition of follow-up and control procedures.

ii. (b) Planning Resources

Planning resources rank second, in terms of frequency of empirical research, and were examined in 52% of the sample articles. This component encompasses both the informational input required for planning (*e.g.*, business plans and their quality) as well as the human, financial and technical resources. Many of the studies focused on examining the human resource component specifically (Premkumar & King, 1994). The stakeholders of SISP are most often mentioned as being top management, IS management, user management, and end users (Lederer & Sethi 1996, Hackney & Kawalek 1999). Top management and IS management play an especially critical role (Reich & Benbasat 2000). Attitude, communications, relationship, participation, involvement, responsibility, commitment, influence, competence, support, interaction, education, training, knowledge, motivations for planning and shared domain knowledge are some common measures used within this domain (Basu *et al.* 2002, Hann & Weber 1996, Reich & Benbasat 2000, Sabherwal & King 1992). Given the large number of such descriptors, development of higher order factors to describe this component would be useful. E-Business and e-commerce may also present further challenges, as additional stakeholders to consider in inter-organisations systems planning are external entities such as customers, suppliers, partners, and regulatory bodies (Finnegan *et al.*, 1999).

ii. (c) Planning Outcomes

Evaluative research has focused on assessing the effectiveness and impact of SISP (48% of studies). Fulfilment of key planning objectives is the most often used measure for determining effectiveness (Premkumar & King 1991, Baker 1995, Lederer & Sethi 1996, Segars & Grover 1998). Alignment stands out as arguably the major goal for SISP, and was therefore depicted by Lederer & Salmela (1996) as being the dependent variable in their theory. There is support for this representation [of alignment as the outcome] from Reich & Benbasat (2000), who note that in many studies there is a lack of distinction between factors causing alignment and alignment itself. They therefore conceptualise alignment as a state or an outcome, and the

determinants of alignment as process factors. An example of a process determinant is the level of integration between business planning and SISP processes (BP-ISP integration), this also being an example of a factor that is often confused with the alignment outcome. Reich & Benbasat (2000) furthermore distinguished between the intellectual dimension of alignment and the social dimension, the former being concerned with the links and interrelationships between formal business and IS plans, and the latter with the degree of mutual understanding of and commitment to business and IS plans and objectives by both business and IT executives.

Whilst alignment is the most often researched outcome measure, other outcomes, such as planner/user satisfaction (Tang & Tang, 1996), extent of analysis, degree of cooperation achieved, improvement in capability over time (Segars & Grover, 1998), and the impact of SISP on IS functional performance (Cohen, 2002) and IS contribution to organisational performance (Premkumar & King 1991, Sabherwal, 1999) have also been researched. Several studies have examined the interrelationship between outcome variables, such as between alignment and organisational performance, which have served to reinforce the efficacy of SISP (Chan & Huff, 1993).

ii. (d) Internal Environment

Various factors within the internal environment have been researched (45% of studies). There is typically a clear distinction between factors within the internal business environment - organisational size, complexity, type, structure, culture, management style, politics/power, sophistication, strategy (Byrd *et al.* 1995, Premkumar & King 1994, Sabherwal 1999, Flynn & Hepburn 1994, McGrath *et al.* 1994, Sillince & Frost 1995); and those within the internal IS environment - role of IS, applications portfolio, IT infrastructure, IS maturity, structure, formalisation, sophistication (Jiang & Klein 1999, Premkumar & King 1992, Ranganathan & Sethi 2002, Sabherwal 1999). Once again development of higher order factors would be useful to make sense of the multitude of variables identified.

ii. (e) Information Plan

The information plan has been researched in 26% of the sample articles. The reasons for this low percentage in comparison to the other components may be that the ultimate value of SISP is not in the plan documentation itself, but in the plan implementation and ultimate impact on organisational performance. Many studies examining plan outputs may not be classified as being within the SISP domain. For example, one product of SISP is an information architecture, this being a whole area of research in itself (Periasamy & Feeny, 1997).

ii. (f) External Environment

The external environment has been examined in only 19% of the sample. This may be due to the fact that the impacts of the external environment on SISP are primarily indirect, through the internal environment. Nevertheless, the study of this component has been gaining ground recently as attention shifts to planning for inter-organisational systems, and electronic commerce, where suppliers, customers and partners play a more significant role in terms of IS planning (Finnegan *et al.*, 1999). Specific factors that have been mentioned within the general external business environment include government policies (socio-economic), regional policies (*e.g.*, Gulf region, EU, *etc*), market place volatility, type of industry, competitive forces, and environmental uncertainty (dynamism, heterogeneity, hostility) (Abdul-Gader 1997, Aladwani 2001, Sabherwal & King 1995, Teo & King 1997). Within the external IT environment, information intensity, and the rate of IT change have been mentioned (Benamati & Lederer 2001, Teo & King 1997). There have been few studies that have attempted to operationalise constructs within the external environment, save for that of environmental uncertainty and information intensity assessed in Sabherwal & King (1995) and also by Teo & King (1997), and more recently the external IT environment (Ranganathan & Sethi, 2000).

ii. (g) Plan Implementation

Plan implementation is researched in only 7% of the studies. This is surprising given that without plan implementation, the whole planning process is thrown into question. Much research attention in SISP, however, has been on implementation planning (which is considered to be part of the process component according to the definition adopted in this study– Mentzas, 1997) and on implementation predictors (considered part of the information plan – Gottschalk, 1999a), rather than plan implementation *per se*, which has been assessed in terms of plan implementation rate and implementation extent (Gottschalk, 1999a). The low percentage does, however, point to a need for more research in this domain.

iii Relationships between Components

In order to ascertain what relationships have been identified between components, the heuristic employed in the analysis was to specify a relationship as given if empirical evidence was provided for it, either between the defined components or between several lower order variables within components. By synthesis and generalisation, a relationship was assumed if a sufficient number of lower order variables were related. Those identified are highlighted in Table 3.11 below. The key studies examining each relationship are mentioned in the discussion following the table.

Table 3.11: Relationships Researched

	IntEnv	ExtEnv	Resource	Process	Plan	Implem.	Outcome
IntEnv	-	-	7	25	3	-	7
ExtEnv	-	-	-	6	-	-	-
Resource	-	-	-	12	3	2	9
Process	-	-	-	-	8	4	23
Plan	-	-	-	-	-	3	5
Implem.	-	-	-	-	-	-	2
Outcome	-	-	-	1	-	-	-

Each of the above relationships will be examined in turn, to ascertain what hypothesis are either supported or suggested from the studies examining them.

iii. (a) Planning Process - Planning Outcomes

That this relationship is one of the most commonly assessed (see Table 3.11) is not surprising given that the planning outcome component is more often than not the dependent variable in SISP studies. Bajally (1998) showed that where SISP is carried out comprehensively, there is more of a strategic IS orientation in the organisation. It has been shown likewise that planning process quality (or the extent of planning activities, or comprehensiveness) influences planning effectiveness (this being defined as the extent of fulfilment of key planning objectives), as well as IS functional performance and IS contribution to organisational performance (Premkumar & King 1991, 1994). Tang & Tang (1996) found that the extent of SISP was positively associated with user satisfaction with IS. Lederer & Sethi (1996, 1998) demonstrated that planning practices that emphasise alacrity (planning quickly), and that identify business value in the plan are associated with planning effectiveness. It has been confirmed too in several studies that an organisational approach (also called rational-adaptive) is the most successful. Rationality is reflected in a highly formalised, top down approach that is comprehensive in the making of decisions, and focused on control. Adaptation is reflected in frequent planning cycles, and broad participation profiles (Segars *et al.* 1998, Doherty *et al.* 1999). In contrast, where there is a highly political as opposed to rational planning process, non-alignment is common, and may be deliberately engineered to serve vested interests (Sillince & Frost 1995). The level of integration between business planning and SISP (BP-ISP integration) has been found to have a positive impact on the social dimension of alignment between business and IS (Reich & Benbasat, 2000), IT infrastructure capability (Broadbent *et al.*, 1999) and IS contribution to organisational performance (Teo & King 1996, King & Teo 2000). Cohen (2002) confirmed that the emphasis placed on planning activities, and SISP integration mechanisms that aim to increase interaction between business and IS have a positive impact on IS functional performance. There is thus compelling evidence provided for the following hypothesis:

A more comprehensive, sophisticated (rational-adaptive, high BP-ISP integration) planning process results in more effective planning outcomes.

These studies show that the planning process component can be examined from two perspectives – planning activities and their comprehensiveness, and planning characteristics, which can be classified as rational, adaptive and integrative (*e.g.* BP-ISP integration).

Evidence is presented from studies in the public sector (Bajally 1998, Sillince & Frost 1995), as well as the corporate sector (Premkumar & King 1991, Segars & Grover 1998) and from a variety of countries including USA (King & Teo, 2000), Canada (Reich & Benbasat, 2000), Taiwan (Tang & Tang, 1996), UK (Doherty *et al.*, 1999), and South Africa (Cohen, 2002), further confirming the efficacy of SISP in different contexts.

The relationship is not indicated in the framework in Figure 3.9, as this effect may be assumed to take place through the information plan and plan implementation components. However, the benefits of SISP process are sometimes intangible, and are not reflected in tangible plan outputs (Baker, 1995). These are factors such as improved coordination and communications with top management and users (Premkumar & King, 1994, Segars & Grover, 1998), increased top management commitment to IT (Lederer & Sethi, 1996), increased IS understanding of the business, and increased top management understanding of the strategic potential of IS (Segars & Grover, 1998). This justifies, therefore, that a direct relationship is important, and should be represented in any theory of SISP.

iii. (b) Internal Environment – Planning Process

Relationships between various lower order factors within the internal environment and within the planning process have been examined in several of the studies. Conrath *et al.* (1992) showed that organisational size (annual revenue and number of employees) and IS function size (IS budget, number of IS employees) distinguished those who did carry out SISP from those who did not, a finding supported by Teo *et al.* (1997). Lederer & Sethi (1992) showed that for those that do carry out SISP, failure to adequately analyse and take into account the internal environment leads to an excessively lengthy and costly planning exercise. Byrd *et al.* (1995) found

complexity (number of stakeholders) to impact negatively on the level of agreement within the SISP process, whilst Flynn & Goleniewska (1993) showed that the business-planning horizon determined the SISP horizon.

In terms of the internal IS environment, Jiang & Klein (1999) showed that IS maturity (the extent to which IS plays a strategic role) determined the IS project evaluation criteria used, and Sabherwal & King (1992) show IS maturity (number of functions supplied by IT, IT penetration, functional impact, competencies) to have an influence on the level of rationality (analysis) in SISP. Ranganathan & Sethi (2002) similarly demonstrate that rationality in SISP is influenced by the degree of formalisation of the IT unit structure.

Premkumar & King (1991, 1992, 1994) in a comprehensive study showed that better quality strategic business planning, and a more strategic role for IS in the organisation impacted on the quality (comprehensiveness) of the planning process. Sabherwal (1999) too show that SISP process sophistication (business plans considered, degree of formalisation) is influenced by better integration between strategic business units, and on the organisational IT capability. Sabherwal & King (1995) explore the concept of fit between the internal environment, external environment, and SISP characteristics, in determining the best approach to identifying strategic IS.

No studies have therefore specifically examined the simplicity of the internal environment and its impact on SISP process efficiency and effectiveness as suggested by hypothesis H2. There is some support from Byrd *et al.* (1995) who found organisational complexity (number of stakeholders) to negatively impact on the level of agreement in SISP. However, the measure of complexity, and the scope of impact in the SISP process are too narrow to show strong support for this hypothesis. Thus, more studies are needed to investigate it further.

Analysis and synthesis of the articles leads to two major propositions:

Where the internal environment has higher levels of sophistication (*e.g.*, quality in strategic business planning, strategic role for IS), planning processes tend to be more comprehensive and rational.

The environmental context in which SISP is taking place should be carefully considered to ensure that there is a fit between environment and SISP process characteristics.

As a result the following additional hypotheses are identified:

The more sophisticated the internal environment, the more comprehensive and sophisticated (rational) is the planning process.

The better the fit between environmental (internal and external) characteristics and planning characteristics, the more effective the planning outcomes.

iii. (c) External Environment – Planning Process

Few empirical studies have examined this relationship. Of the studies that have, findings have been mixed, with one study showing a weak relationship between environmental uncertainty and BP-ISP integration (Teo & King, 1997). Sabherwal & King (1992), however, show that rationality (level of analysis) in SISP is impacted negatively by environmental dynamism, and positively by heterogeneity, whilst environmental hostility leads to a more political planning process. Sabherwal & King (1995) demonstrate the need for a fit between the external environment and planning process characteristics. Thus, the hypothesis H1, which suggests the need to examine the stability of the external environment and its impact on process efficiency and effectiveness has not explicitly been examined. Instability or uncertainty have, however, been shown to have an impact, but their negative influences may possibly be offset by appropriate planning approaches. More research is therefore needed to make better sense of this relationship. An additional hypothesis that is suggested is:

The better the fit between environment characteristics and planning process characteristics, the more effective the planning outcomes.

iii. (d) Planning Resources – Planning Process

Hann & Weber (1996) demonstrate that top management competence in IS, and the degree to which they depend on IS management will determine who controls the SISP process. Shared domain knowledge between business and IS management was shown

to influence rationality in SISP (Ranganathan & Sethi, 2002), and top management perceptions of IT, and business competence of IS were found to affect levels of BP-ISP integration (Teo & King, 1997). Broad participation profiles are furthermore an important characteristic of an organisational approach to SISP, demonstrated to be the most successful (Earl 1993, Segars & Grover 1999, Doherty *et al.* 1999), whilst top management IS knowledge, IS management business knowledge, and top management involvement are considered to be representative of a sophisticated planning process (Sabherwal, 1999). One key study examined a hypothesis similar to hypothesis H3 (Table 3.7), and showed that there is a strong relationship between planning resource extensiveness/quality (top management and user involvement, adequacy of IS planners and financial resources, and quality of input) and planning process quality (comprehensiveness) (Premkumar & King, 1994). In all, therefore, this relationship is well tested. However, rather than the efficiency and effectiveness of the process being the dependent variable as suggested by hypothesis H3, it has been either comprehensiveness of planning activities, or planning characteristics, such as BP-ISP integration and rationality. Thus, the hypothesis identified is:

More extensive and higher quality planning resources produce a more comprehensive and sophisticated (rational, high BP –ISP integration) planning process.

iii. (e) Planning Process – Information Plan

Bergeron *et al.* (1991) demonstrate that choice of methodology impacts the applications portfolio (a component of the information plan) resulting from the process. Thus, the need to match methodology with desired objectives. It has been shown also that planning process problems lead to problems with the plan output (Lederer & Sethi, 1992). Where the focus of SISP is on the business rather than IT, the quality of plan output is better (Byrd *et al.*, 1995). This is somewhat confirmed by Hann & Weber (1996), who show that if top management control the SISP process, their goals are present in the IS plan, and thus the plans are more useful, whereas if IS management are in control, it is their goals that are evident, leading to a less useful plan for the organisation as a whole. A major study showed that greater BP-ISP integration results in fewer plan output problems (Teo & King, 1996). Strong support is provided for hypothesis H4, specifically by Premkumar & King (1991) who

demonstrate a relationship between planning process quality (comprehensiveness) and information plan quality.

Empirical research suggests that once again, the SISP process should not be viewed only in terms of the extent of planning activities, but also in terms of planning characteristics such as BP-ISP integration. Thus, hypothesis H4 can be expanded to read:

A more comprehensive and sophisticated (high BP-ISP integration) planning process produces a more comprehensive and useful information plan.

iii. (f) Information Plan – Plan Implementation

The articles that report on this relationship examined specifically hypothesis H5 (Table 3.7), and provided some support for it (Gottschalk, 1999a, 1999b). The variables examined, however, explained only a small percentage of the variation in plan implementation, thus indicating that there are other factors that influence plan implementation that were not considered. The two key predictors of plan implementation were description of responsibility for implementation, and description of user involvement in implementation, items that relate to the resources component.

iii. (g) Plan Implementation – Planning Outcomes

Two articles in the sample allude to a relationship between plan implementation and planning outcomes, but rather than referring to the extent of plan implementation, the independent variables were quality of implementation mechanisms, such as top management monitoring of implementation (Premkumar & King, 1994) or tracking of implementation (Broadbent *et al.*, 1999). Thus, hypothesis H6 has not been fully tested within the context of SISP.

iii. (h) Internal Environment – Planning Resources

No hypotheses is suggested for this relationship in Figure 3.9, but it has been shown that there are relationships between lower order factors in the internal environment

and planning resources component. For example, where the role of IS is strategic in a firm, the planning resource quality is better (Premkumar & King, 1992). Ranganathan & Sethi (2002) also demonstrate that the greater the level of formalisation within the IT unit structure, the greater the levels of shared domain knowledge between business and IS executives, but that greater centralisation of the IT unit structure has a negative impact on shared domain knowledge. IS maturity (inclusive of business competence of IS staff, and IS competence of business staff) was found to be related to the influence wielded by top management and IS management in the SISP process (Sabherwal & King, 1992). The following hypothesis may hold true:

A more sophisticated internal environment results in more extensive and better quality planning resources.

iii. (i) Internal Environment – Information Plan

Byrd *et al.* (1995) showed a relationship between the fit between organisational size and IT infrastructure sophistication, and the quality of IT plan produced. Lederer & Sethi (1991) show that when business planning is strategic, rather than tactical or financial, there are fewer problems with hardware plans. Once again this relationship may be indirect, as these factors have been shown to influence the planning process, which in turn influences the information plan. Nevertheless, the following hypothesis is suggested:

A more sophisticated internal environment results in a more extensive and more useful information plan.

iii. (j) Internal Environment – Planning Outcomes

This relationship is not shown in the SISP theory in Figure 3.9, but has nevertheless been suggested in some empirical studies. Ang & Quek (1999) show that there is a relationship between internal environment factors (*e.g.*, organisational structure, IS sophistication, and IT configuration), and organisational performance indicators (improved competitiveness, operational efficiency, and resource management). This may possibly be due to SISP, where as a result of implementing plans, appropriate organisational structures, IS procedures and IT configurations are established, these

having a positive impact on organisational performance. Chan *et al.* (1997) show furthermore that realised business strategic orientation, IS strategic alignment and IS effectiveness have an impact on organisational performance. Given these are expected outcomes of SISP, this further demonstrates its efficacy. Sabherwal (1999) shows also that IT capability impacts on IS success (contribution to organisational performance), and suggests that it may therefore be possible to achieve IS success without carrying out SISP, but through building IT capabilities. The successes that result from this, will then lead to justification for a strategic role for IS in the firm, and consequently SISP, this then leading to further IS success. Premkumar & King (1992) provide support for this argument by demonstrating that the more strategic the role of IS in a firm, the more effective is SISP, and the better the IS function performance and contribution of IS to organisational performance.

In summary, therefore, three possibilities are suggested by the studies examining the relationship between the internal environment and planning outcomes:

The relationships found between internal environment and planning outcomes may simply be due to the fact that as SISP plans are implemented, they result in improvements to the internal environment, which ultimately reflect in IS function and organisational performance, these being measures of SISP performance. This demonstrates the cyclical and longitudinal nature of SISP, whereby the impacts of one planning cycle need to be assessed over time, as plans are implemented, and result in changes to the internal environment.

The impact of the internal environment on planning outcomes may be indirect through the planning process. For example, where there is a strategic role for IS in a firm, SISP is recognised as important, thus planning processes are more comprehensive and sophisticated, leading to successful planning outcomes.

It may be possible to achieve the intended outcomes of SISP (*e.g.*, improved IS contribution to organisational performance) through other means in the short term, such as through enhanced IT capabilities (Sabherwal, 1999).

Findings thus support the following hypothesis:

A more sophisticated internal environment leads to more effective planning outcomes.

iii. (k) Planning Resource – Information Plan

It has been found that problems with resources (such as inadequate user involvement or lack of top management commitment) lead to plans being perceived as not useful (Lederer & Sethi, 1992). Byrd *et al.* (1995) show also that conversely top management support for SISP leads to better quality IT plans. Lack of agreement between stakeholders, however, negatively impacts the IT plan quality. This provides some support for the following hypothesis:

More extensive and better quality planning resources result in a more extensive and useful information plan.

The nature of this relationship may be indirect, however, through the planning process itself, thus the limited research attention.

iii. (l) Planning Resource – Plan Implementation

Gottschalk (1999a) in a study examining aspects of the information plan that may lead to implementation found that the two key predictors of plan implementation were description of responsibility for implementation, and description of user involvement in implementation. Both items relate to the resources component, providing indirect support for a relationship between resource quality and plan implementation. Premkumar & King (1994) furthermore show a strong relationship between planning resource quality, and the quality of plan implementation mechanisms. These mechanisms incidentally include resource-related concerns such as mobilisation of resources for implementation, top management monitoring of implementation, and user involvement in implementation, further underlining the importance of resources for plan implementation to be successful. Thus, it can be hypothesised that:

More extensive and better quality planning resources results in greater plan implementation

iii. (m) Planning Resource – Planning Outcomes

Several studies examine relationships between lower order factors within these components. Shared domain knowledge between business and IS executives has been

shown to be associated with a greater degree of long-term social alignment (Reich & Benbasat, 2000). Informed IT management, organisational commitment, and top management involvement are associated with planning effectiveness (Aladwani 2001, Basu *et al.*, 2002), as is planning resource quality (Premkumar & King, 1994). Organisational commitment has been shown to also impact IS functional performance (Cohen, 2002). The direct relationship between planning resources and planning outcomes is not shown in the theory of SISP in Figure 3.9, as resources are required for the planning process and implementation, and of themselves cannot produce the planning outcomes. The strong relationship shown in the studies analysed, however, does point to the importance of extensive and quality resources in order to achieve planning outcomes. Thus the hypothesis:

More extensive and better quality planning resources results in more effective planning outcomes.

iii. (n) Planning Process – Plan Implementation

Premkumar & King (1994) demonstrated a relationship between process quality and implementation mechanism quality, whilst Lederer & Sethi (1992) found that organisational and cost problems during SISP lead ultimately to implementation problems. Higher levels of BP-ISP integration were found to alleviate these problems, however (Teo & King, 1996). Tang & Tang (1996) found that more extensive planning is associated with greater plan implementation. Thus, the hypothesis supported would be:

A more comprehensive and integrated planning process leads to greater plan implementation.

iii. (o) Information Plan – Planning Outcomes

Few studies have specifically focused on this relationship, and it is not shown in the theory in Figure 3.9. Its limited attention may be due to the fact that planning outcomes arise either from carrying out the planning process, or implementing the information plans, rather than the plans themselves. Nevertheless, some studies suggest a relationship. Hann & Weber (1996) show that where top management goals

are reflected in the plan, they are more useful. Premkumar & King (1991) demonstrate that output plan quality is associated with successful planning outcomes, and Lederer & Sethi (1996) show that several prescriptions relating to information plan output are strongly associated with planning effectiveness (e.g., preparation of migration plan, documentation of existing systems). Thus, there is thus some support for the following hypothesis:

A more extensive and useful information plan results in more effective planning outcomes.

iii. (p) Planning Outcomes – Planning Process

Sabherwal (1999) demonstrate a relationship between IS success and SISP sophistication (Sabherwal, 1999). The finding highlights the fact that where the efficacy of SISP is proven, there is greater organisational commitment to carry on the process, and even improve it. This argument is supported by Reich & Benbasat (2000), who found that IT implementation success leads to better communications between business and IS, which in turn improves the level of social alignment. The finding also highlights the importance of feedback mechanisms, whereby planning outcomes are evaluated and these results used to either improve the process that was used, or confirm its utility (Baker, 1995). Thus, the hypothesis suggested is:

The more positive the planning outcomes, the more comprehensive and sophisticated the planning process becomes.

On the basis of these relationships, this analysis has revealed several other hypotheses that can be formulated, in addition to those postulated in Table 3.7. These are summarised in Table 3.12 below, together with the original set, and are further illustrated in Figure 3.10.

Table 3.12: Extended set of hypotheses derived from qualitative meta-analysis

	* Hypotheses
H1	A more (un)stable external environment produces a more (in) effective and (in) efficient planning process.
H2	A simpler internal environment produces a more effective and efficient planning process.
H2b	The more sophisticated the internal environment, the more comprehensive and sophisticated (rational) is the planning process
H2c	A more sophisticated internal environment results in more extensive and better quality planning resources
H2d	The better the fit between environmental (internal and/or external) characteristics and planning characteristics, the more positive the planning outcomes
H2e	A more sophisticated internal environment results in a more extensive and more useful information plan.
H2f	A more sophisticated internal environment leads to more positive planning outcomes.
H3	More extensive and higher quality planning resources produce a more comprehensive and sophisticated (rational, high BP –ISP integration) planning process
H3b	More extensive and better quality planning resources result in a more extensive and useful information plan.
H3c	More extensive and better quality planning resources results in more positive planning outcomes (e.g., better alignment).
H3d	More extensive and better quality planning resources results in better plan implementation
H4	A more comprehensive and sophisticated (high BP-ISP integration) planning process produces a more comprehensive and useful information plan
H4b	A more comprehensive, sophisticated planning process leads to greater plan implementation.
H4c	A more comprehensive, sophisticated (rational-adaptive, high BP-ISP integration) planning process results in more positive planning outcomes
H5	A more useful information plan produces greater plan implementation
H5b	A more extensive and useful information plan results in more positive planning outcomes.
H6	Greater plan implementation produces more positive planning outcomes.
H7	The more positive the planning outcomes, the more comprehensive and sophisticated the planning process becomes

* Hypotheses were derived by combining the initial Lederer & Salmela hypotheses in Table 3.7, with those emerging from the analyses in Section 3.9.3 above.

3.9.4 Quantitative Meta-analysis

In order to assess the strength of relationships described above, a quantitative meta-analysis is useful. As stated by Legris *et al.* (2003) “a meta-analysis aims at integrating a large number of results to determine if they are homogeneous. Statistical methods are applied to summary statistics. The focus is not on statistical significance,

but on the size of treatment effects. The objective is a detailed review that supports making a sound judgement on the average of the findings computed, and on the reasons for inconsistencies” (p. 197).

67 of 137 articles identified in this study provided statistical support for relationships, and so could be examined using meta-analysis (See Appendix 2 for listing). The meta-analytic technique employed was to identify coefficients between relationships (correlation, regression, path, *etc.*), and then to aggregate these (weighted by sample size in each case), to obtain an overall mean effect size. This was done as described by Hwang *et al.* (2000). For each instance of a relationship, sample size (N_i) was multiplied by the coefficient (r_i) (See Appendix 3 for details of sample size and coefficients). For each relationship these products were then aggregated. The total sample sizes were also aggregated. The mean size effect was then obtained by dividing the summed products by the summed sample sizes, these being shown in Table 3.13.

The equation used for each relationship was therefore:

$$\text{Mean effect size} = \sum (N_i * r_i) / \sum N_i$$

In order to compare the strength of relationships, the following heuristic was employed. A strong relationship is implied where the mean effect size between dimensions is estimated at above 0.45 (STRONG). A medium-strength relationship is indicated by a value between 0.25 and 0.45 (MEDIUM), and some evidence of a relationship is where the effect size is between 0.05 and 0.25 (SOME) (*e.g.* Hwang *et al.*, 2000). Included in the SOME category are quantitative studies where coefficients were not reported and could not be determined, but where support was shown. If any mean effect is less than 0.05, the relationship is defined as WEAK. Where no coefficients are reported, as with qualitative and conceptual research, a relationship was specified as being supported by qualitative evidence only (QUAL). The findings are displayed in Table 3.13 below, and illustrated in Figure 3.10.

The limitation of the above approach was that, although correlation coefficients were used where available, when not reported, regression or path coefficients were used. Another limitation was that when aggregating factors together, no account was taken of the granularity of each factor, nor of relative importance. So, for example, in the relationship between resource quality and planning process quality, Premkumar & King (1994) specifically assessed this relationship and found a coefficient of 0.44. Ranganathan & Sethi (2002) in examining the same components looked only at the relationship between level of shared domain knowledge (a resource factor), and level of rationality in the planning process (a process factor), and found a coefficient of 0.34. In aggregating these and other results together to get the mean size effect, no account was taken of the differences in scope of factors (resource quality being a broader concept than shared domain knowledge), nor of their relative importance. The analysis was deemed sufficient, however, as its purpose was to get a rough estimate of strength of relationships.

Table 3.13: Hypothesis Testing through Quantitative Meta-analysis

	Hypotheses	Effect	Support
H1	A more (un)stable external environment produces a more (in) effective and (in) efficient planning process.	-0.04	WEAK
H2	A simpler internal environment produces a more effective and efficient planning process.	-	QUAL
H2b	The more sophisticated the internal environment, the more comprehensive and sophisticated (rational) is the planning process	0.19	SOME
H2c	A more sophisticated internal environment results in more extensive and better quality planning resources	0.22	SOME
H2d	The better the fit between environmental (internal and/or external) characteristics and planning characteristics, the more positive the planning outcomes	-	SOME
H2e	A more sophisticated internal environment results in a more extensive and more useful information plan.	-	SOME
H2f	A more sophisticated internal environment leads to more positive planning outcomes.	0.18	SOME
H3	More extensive and higher quality planning resources produce a more comprehensive and sophisticated (rational, high BP –ISP integration) planning process	0.22	SOME
H3b	More extensive and better quality planning resources result in a more extensive and useful information plan.	-	SOME
H3c	More extensive and better quality planning resources results in more positive planning outcomes (e.g., better alignment).	0.38	MEDIUM
H3d	More extensive and better quality planning resources results in better plan implementation	0.47	STRONG
H4	A more comprehensive and sophisticated (high BP-ISP integration) planning process produces a more comprehensive and useful information plan	0.47	STRONG
H4b	A more comprehensive, sophisticated planning process leads to greater plan implementation.	0.54	STRONG
H4c	A more comprehensive, sophisticated (rational-adaptive, high BP-ISP integration) planning process results in more positive planning outcomes	0.35	MEDIUM
H5	A more useful information plan produces greater plan implementation	0.27	MEDIUM
H5b	A more extensive and useful information plan results in more positive planning outcomes.	0.33	MEDIUM
H6	Greater plan implementation produces more positive planning outcomes.	0.26	MEDIUM
H7	The more positive the planning outcomes, the more comprehensive and sophisticated the planning process becomes	0.5	STRONG

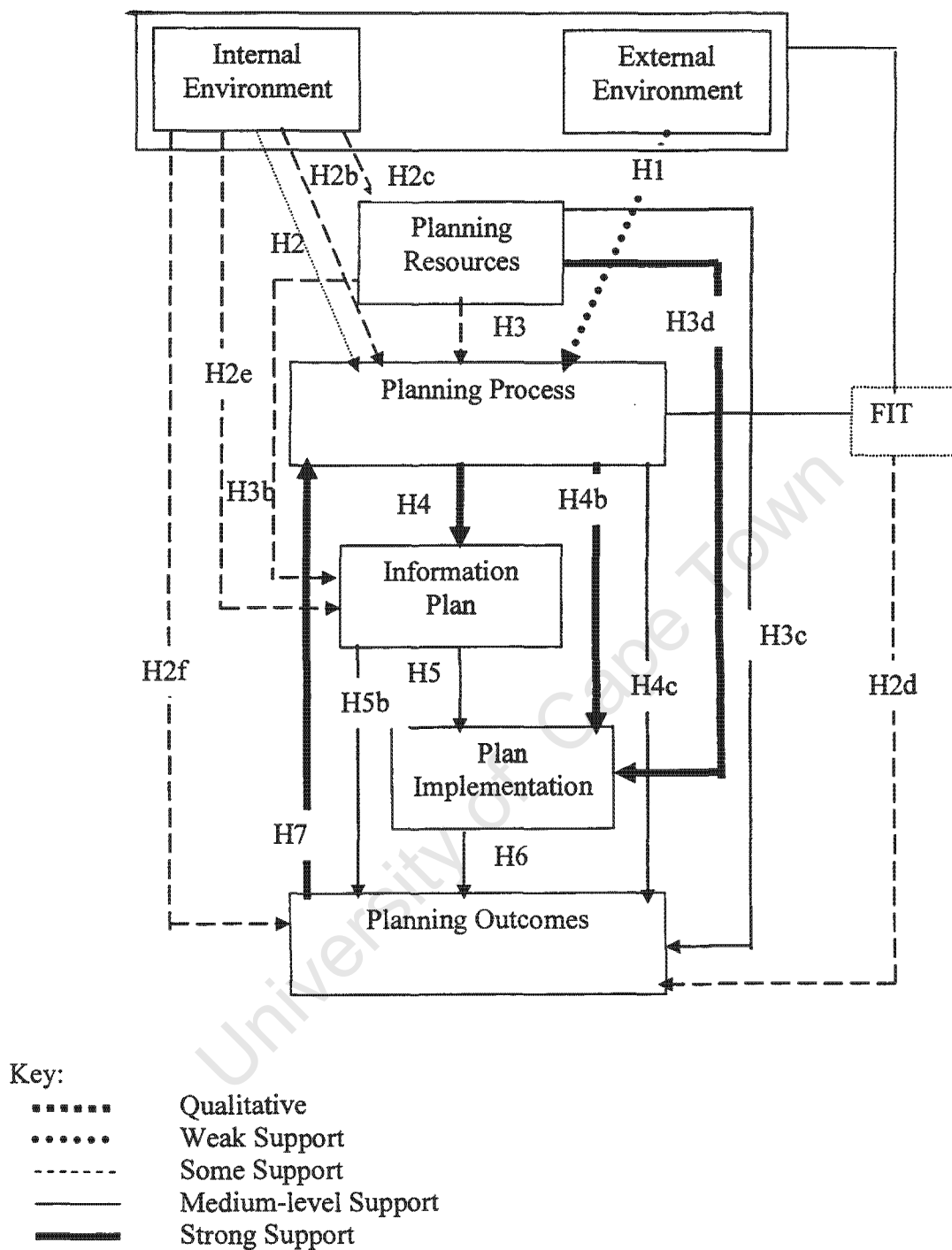


Figure 3.10: SISP Theory – An extended set of hypotheses (Amended from Lederer & Salmela, 1996)

* The above illustration represents pictorially the information displayed in Table 3.13 above.

3.9.5 Discussion and Critique of Extended Theoretical Framework

The extensions to the Lederer & Salmela (1996) model suggested by the meta-analysis represent direct, indirect and contingency effects between the different categories. As a result a total of 18 hypotheses were suggested from the meta-analysis as compared to the 6 hypotheses initially specified. No new categories were identified, as all concepts and constructs were fitted within the most appropriate category already suggested by the framework. Thus only new relationships emerged. That all possible constructs and concepts could indeed be matched to one of the 7 categories attests to the usefulness of the framework nevertheless. Validation of this framework was provided by fitting some new SISP studies published post-2002 into the framework. In all cases, the extended framework accommodated these studies too.

One of the limitations of the meta-analysis was that categories were not allowed to emerge from the data, thus there was a forcing of data to fit the model. As a result, a certain amount of detail, especially from qualitative studies was lost. The variance model that this theory represents is also constraining in that only cause-effect relationships are identified, which are most suitable for testing using positivistic quantitative hypothetico-deductive techniques. The richness and complexity of real world SISP processes is sanitised by this abstraction. Baker (1995) provides an alternative process model, using about the same set of categories, which goes some way to explaining the sequence of processes in SISP. It is somewhat idealistic in that it gives the impression that through the existence of feedback loops, a process of continuous improvement will automatically ensue. Thus once again, this is an oversimplification of real world practice, where unintended consequences often occur, giving rise to dynamics and outcomes that are not initially envisaged. For example, Ciborra & Hanseth (2001) show that following this type of goal-seeking model, where the ultimate aim is alignment within the formative context of management as control leads to unintended consequences. One of these is drift, whereby the impact of a dynamic and turbulent organisational and external environment leads to alignment being a moving target. In an attempt to control this drift, more complex and sophisticated IT infrastructure is implemented. This infrastructure is never completely aligned to business strategy, due to implementation difficulties and resistance to

change, which produce a bottom-up alignment effect rather than top-down business strategy alignment.

We decided therefore to re-analyse the literature to come up with a richer description of SISP theory, that more closely represented the description of SISP obtained through research, whether qualitative or quantitative. A methodology suitable for this purpose is the grounded theory approach, as it generates theory that is grounded in the data. This methodology will be described in the next section, as will be the procedure used for conducting this study.

University of Cape Town

Chapter 4 Research Methodology

4.1	Introduction	84
4.2	Positivism, Interpretivism and Criticalism	84
4.2.1	Positivism	84
4.2.2	Interpretivism.....	85
4.2.3	Criticalism	86
4.3	Research Methods in IS	87
4.3.1	Research Methods in SISP	88
4.4	Epistemological Choice	90
4.5	Grounded Theory Methodology	91
4.5.1	Introduction (drawn primarily from Glaser & Strauss, 1967)	91
4.5.2	The Grounded Theory Method – A Paradigmatic Analysis	92
4.5.3	The Glaser versus Strauss debate	94
4.5.4	Grounded Theory Elements.....	95
4.5.5	Grounded Theory - Principles, Procedures and Techniques	97
4.5.6	Grounded Theory in IS Research	105
4.6	Research Objectives and Research Procedure.....	107
4.6.1	Research Objectives	107
4.6.2	Procedure for the Literature Case.....	109
4.6.3	Procedure for Field Studies	111
4.6.4	Demographic Profile of Candidates and Selection Criteria.....	117

4.1 Introduction

In this chapter, the alternative paradigmatic perspectives suitable for use in IS research will be investigated, followed by an examination of the various research methods that have typically been employed. Research methods common to the IS field in general will firstly be highlighted, followed by more specifically those used in SISP. The grounded theory methodology will then be discussed, leading into an outline of the research objectives and research procedure employed in this study.

4.2 Positivism, Interpretivism and Criticalism

The Information Systems (IS) discipline is in its infancy in comparison to established fields such as Physics, Mathematics and Chemistry, and fairly young when compared with, *e.g.*, Sociology, Anthropology, *etc.* It furthermore draws from several cognate disciplines, and is seen as being at the intersection of three core areas – exact sciences (*e.g.*, General Systems Theory), technology (*e.g.*, Computer Science) and social and behavioural science (*e.g.*, Sociology), respectively (Checkland & Howell, 1998). Given this multidisciplinary nature, IS research, in like manner, has tended to draw from the research traditions within these cognate disciplines. Orlikowski & Baroudi (1991) outline the three main paradigms underpinning IS research as being positivist, interpretivist, and critical.

4.2.1 Positivism

The positivist paradigm clearly predominates, due in no small part to the strongly positivistic leanings of the pre-eminent journals in the discipline (*e.g.*, MIS Quarterly, and Information Systems Research), especially during the discipline's formative years (Mingers 2003). Ontologically this paradigm assumes "*an objective physical and social world that exists independent of humans, and whose nature can be relatively unproblematically apprehended, characterised and measured*" (Orlikowski & Baroudi, 1991, p. 9). Typically, such research proceeds very broadly by (1) establishing a theoretical framework for the phenomenon under study through a

detailed literature review, often drawing from the cognate disciplines; (2) deriving hypotheses from this theoretical framework; (3) Operationalising constructs and designing a measuring instrument; (4) gathering of data through survey questionnaire (s); (5) analysing data and testing hypotheses using statistical techniques. Variations of this approach include employing case studies rather than large-scale surveys (Paré, 2004). In the SISP literature, the positivistic research tradition predominates with several key researchers following this paradigm (Premkumar & King 1994, Segars & Grover 1999, Cohen 2002).

4.2.2 Interpretivism

Lamprecht (1997) provides a critique of positivism, noting specifically that it fails to take account of the fact that the social world is constructed through meanings and that it is a social practice (p. 44). The latter statement, if applicable to information systems, would have to assume that it is a social discipline, concerned with constructing meaning. That it is indeed so, is highlighted by Checkland & Holwell (1998) who note: *"With 'meaning' at the core of the IS field, work in that field has to be done outside any belief that there is the possibility of a static social world 'out there'..."* (p. 238).

Given this critique of positivism and the nature of information systems propounded by Checkland & Howell (1998), interpretivism has been recognised as a more appropriate paradigm for research in information systems (Klein & Myers 1999). The interpretive paradigm is *"informed by a concern to understand the world as it is, to understand the fundamental nature of the social world at the level of subjective experience. It seeks explanation within the realm of individual consciousness and subjectivity. Within the frame of reference of the participant as opposed to the observer of action"*. (Burrell & Morgan, 1979, p. 28). Interpretive research is emergent, and thus clearly defined principles and guidelines that can be followed mechanistically are not often prescribed (Klein & Myers 1999). This leaves novice researchers and evaluators of interpretive research with no tangible frame of reference. Klein & Myers (1999) therefore identified a set of principles by which to evaluate interpretive IS research. These principles are:

- The fundamental principle of the hermeneutic circle.
- The principle of contextualisation.
- The principle of interaction between the researchers and the subjects.
- The principle of abstraction and generalisation.
- The principle of dialogical reasoning.
- The principle of multiple interpretations.
- The principle of suspicion.

Approaches such as the grounded theory method also identify principles and guidelines that should be followed, albeit not mechanistically (Strauss & Corbin, 1998). Indeed slavishly following these principles constitutes a positivistic approach to developing grounded theory (Bryant, 2002). Grounded theory methodology will be discussed in greater detail in Section 4.5 below, since it is the method to be employed in this study. Studies in SISP employing an interpretive approach are rare, but have been done. Examples include Walsham & Waema (1994) and Shanks (1997).

4.2.3 Criticalism

Howcroft & Trauth (2004) in an examination of critical research and its use in IS studies, note that there are a range of approaches that fall under the critical paradigm, the most common in IS being the work of Habermas. In order to outline a critical epistemology, they identify 5 key themes – emancipation, critique of tradition, non-performative intent, critique of technological determinism, and reflexivity. Each of these will be briefly explained, all explanations being taken from Howcroft & Trauth (2004, *pp.* 196 - 197).

Emancipation – Critical research is characterised by a commitment to emancipating individuals from the power relations inherent in social and organisational life.

Critique of tradition – Critical research seeks to disrupt rather than reproduce the status quo.

Non-performative intent – This “*concerns the rejection of the provision of tools to support and assist managerial efficiency through reengineering minimum inputs for maximum outputs*” (p. 197).

Critique of technological determinism – This theme challenges the discourse around socio-economic change, which assumes that technological development is autonomous, and that societal development is determined by the technology.

Reflexivity – This theme engages in a critique of objectivity and questions the validity of objective, value-free knowledge and information, “*noting how this is often shaped by structures of power and interests*” (p. 197). Like interpretive research, this theme highlights the philosophical and methodological distinction between critical research and mainstream IS research, which is typically positivist (Howcroft & Trauth, 2004). Pozzebon (2004) notes similarly that reflexivity “*implies reflection on text production and language use and reveals a kind of awareness of the ambiguity of language*” (p. 287).

4.3 Research Methods in IS

The above section delineates the alternative paradigmatic perspectives on research. Within each paradigm are alternative methods. In this section the predominant methods used in IS research and then SISP research specifically will be examined. It must be noted that the same method can often be carried out from different paradigmatic perspectives. For example, a case or field study may be carried out within the interpretivist paradigm (e.g. Shanks, 1997), or from a positivist perspective (e.g., Reich & Benbasat, 2000). In either case, data gathered may be qualitative, quantitative, or both. For interpretive studies, qualitative data is more often used. It needs to be emphasised, however, that while quantitative data can be interpreted, quantitative analysis is not interpretive.

Palvia *et al.* (2003) conducted an analysis of research methods employed in several major IS journals – Communications of the ACM, Decision Sciences, Information & Management, Information Systems Research, Journal of Management Information Systems, Management Science and MIS Quarterly respectively. The findings showed

that out of 843 articles published between 1993 and 1997, only 1 article used as the primary method, what they called a qualitative research methodology. Qualitative research according to their definition included interpretivist research using qualitative data. On the other hand the survey research method predominated (24% of articles) followed by research that aimed to develop frameworks and conceptual models (15%). In these journals, therefore, not many interpretive studies have been submitted and/or published. Palvia *et al.* (2003) did note, however, that more recently there has been a growing recognition of the interpretivist paradigm.

Mingers (2001) in like manner examined 6 journals - 3 leading American journals (MIS Quarterly, Information Systems Research, and Communications of the ACM), 2 European journals (Information Systems Journal and European Journal of Information Systems), and one eclectic journal (Accounting, Management and IT). The choice was informed by a desire to prevent a bias towards the American journals, as was the case with the Palvia *et al.* (2003) study. By surveying papers between 1993 and 1998, it was found that the predominant forms of research were surveys, interviews, experiments and case studies. Studies that employed qualitative methodologies such as grounded theory and soft systems methodology were largely absent (Mingers, 2001). This concurs with the findings of Palvia *et al.* (2003), even when European journals, which have a stronger orientation towards the interpretivist paradigm, are included. 13% of empirical articles were found to employ more than one research method, typically a combination of survey, interview and/or case study, but with very little cross-paradigm linkages (Mingers, 2001). According to Mingers (2001), this attests to the need for more interpretive and criticalist research in IS.

4.3.1 Research Methods in SISP

In SISP specifically, as part of the meta-analysis reported in Chapter 3, the alternative research methods employed were also investigated. The previous discussions have indicated that there tends to be an orientation towards positivism in North American journals, and interpretivism in European journals. As a consequence, in this section, the journal sources of articles on SISP will be discussed, as well as the geographic regions from which they emanate.

137 articles published between 1991 and 2002 were identified as investigating some aspect of SISP in the meta-analysis. These were taken from 33 different journals, and were not limited to a select few, as was the case with Palvia *et al.* (2003) and Mingers (2001). Diversity of the sample was evidenced by the fact that the articles were based on studies done in about 20 different countries.

i Journals publishing SISP Studies

The journals from which most articles were gathered for the meta-analysis and their ranking in terms of number of contributions were displayed in Table 3.8 in Chapter 3. They included IS journals as well as some of the major management science journals (e.g., Decision Science). There was a good mix of North American (e.g., MIS Quarterly) as well as European and other journals (e.g., European Journal of Information Systems), indicating no bias towards one or the other in the meta-analysis that was conducted.

ii Geographical Regions of published SISP Studies

The articles examined in the meta-analysis emanated largely from studies done in North America, the US in particular (37% of total). There were also a sizeable number of articles based on studies in Europe and the Asia-Pacific region. The Middle East and Africa were the least represented in terms of publications. This may mirror the state of the global economy, whereby developed countries dominate in most spheres, including that of research. In many developing countries too, there is a lack of skills, capacity, and funding to match research outputs of the developed countries, with the brain drain from developing to developed nations further hampering efforts at redress. The lack of studies in Africa provides further justification for this work in South Africa, which will add to the global body of knowledge on SISP.

iii Research Methods used in SISP

Analysis of research approaches employed reveals that the survey method is the most popular in SISP (43% of articles in meta-analysis), followed by case studies (20%) (Table 4.1). The general findings mirror those regarding IS in general – the predominance of positivism, and of the survey method in particular. There is evidence of interpretivist research having been conducted in SISP (Flynn & Hepburn 1994, Galliers *et al.* 1994, Shanks 1997, Sillince & Frost 1995) but specific methodologies such as grounded theory are rarely mentioned. Thus, given the call for more theory development research in SISP (Lederer & Salmela, 1996) the findings from the meta-analysis provide justification for this study, which attempts to build theory about SISP using grounded theory methodology.

Table 4.1: Research Approaches identified through Meta-Analysis of SISP Literature

Research approach	Frequency
Survey	59 (43%)
Case study (Single Case)	28 (20%)
Field study (Multiple Cases)	23 (17%)
Frameworks and Conceptual Models	19 (14%)
Action research	4 (3%)
Simulation	1 (1%)
Laboratory Experiment	1 (1%)
Field experiment	1 (1%)
Interview	1 (1%)

4.4 Epistemological Choice

Improving SISP in practice has been a perennial concern for IS managers. Interestingly, Salmela & Spil (2002) declare: “*there’s nothing more practical than a good theory*” (p.447). The overall aim of the study was therefore to develop a better understanding of theory around SISP, by interrogating the meanings actors ascribe to this phenomenon. Alternative views were examined in order to illuminate theory from

different vantage points. An interpretivist approach was found to be most suitable as it recognises that reality is socially constructed, and that there will be different views surrounding any issue (Checkland & Holwell 1998, Klein & Myers 1999). Interpretive studies furthermore lend themselves more to theory building than positivistic studies where often the goal is theory testing.

The researcher had, however, prior to this study conducted only positivistic research. This background was recognized as having an influence on how the study was carried out, and how the data were analysed. As such, this was a first attempt at interpretive research. In the next section, the grounded theory methodology, which was the means whereby theory was developed, is examined in greater detail.

4.5 Grounded Theory Methodology

4.5.1 Introduction (drawn primarily from Glaser & Strauss, 1967)

The grounded theory methodology was developed by Barney Glaser & Anselm Strauss in the 1960s. The development of this qualitative approach to research was in part a reaction to an over-emphasis on theory testing in sociology research at the time. The theories being tested were those espoused by grand scholars, and often went unquestioned as to their relevance. Alternatively, they were theories that were hastily put together in a bid to arrive quickly at what was considered the more important theory testing stage (Glaser & Strauss, 1967). With the grounded theory approach, an attempt was made at breaking away from this bias, by emphasising the importance of theory building rather than just theory testing and verification. Furthermore, with this approach theory is derived inductively from data gathered through the research process, rather than deduced from logical assumptions or from what is believed to be common sense (Glaser & Strauss, 1967). Strauss & Corbin (1998) define a grounded theory as one that is *“derived from data, systematically gathered and analysed through the research process”* (p. 12). The justification for this emphasis is that *“theory derived from data is much more likely to resemble the ‘reality’ than is theory*

derived from putting together a series of concepts based on experience or solely through speculation” (Strauss & Corbin, 1998, p. 12).

4.5.2 The Grounded Theory Method – A Paradigmatic Analysis

Bryant (2002) notes that the terms grounded theory and grounded theory method are often confused, and used interchangeably. For example, a researcher might state that he or she is using grounded theory to conduct research, when in fact what is meant is that the grounded theory method or methodology is being employed. The grounded theory, as defined by Glaser & Strauss (1967), is the outcome of the process of using a grounded theory method, although in some cases the method is employed without theory being generated as the outcome (Bryant, 2002). Strauss & Corbin (1998) differentiate between method and methodology by stating that *methodology* is a way of thinking about and studying social reality (p. 3), whilst *methods* are the sets of procedures and techniques for gathering and analysing the data (p. 3). They further state that the methodology involves interpretation based on systematically carried out inquiry.

The latter statement may imply that grounded theory methodology fits within the paradigm of interpretivism. Locke (2001), however, notes that the epistemological paradigm underlying grounded theory has not been clearly articulated by its founders, although the symbolic interactionist school of thought does inform it. Bryant (2002) in a critique of the grounded theory method argue that the manner in which it has been described by both Glaser & Strauss (1967) and Strauss & Corbin (1998) is based on a positivistic epistemology. He states:

“The entire GTM (Grounded Theory Method) endeavour seems to be founded on phenomenism, guided by induction. The only possible conclusion that can be made from all of this is that GTM developed from an epistemological position that was positivist, and that it has failed to justify or shake off this inheritance.” (p. 32).

Bryant (2002) goes on to note that in contrast to their writings, the examination of actual substantive research studies by Glaser, Strauss and others who have employed

grounded theory methodology (e.g., Orlikowski, 1993) does reveal a fit with the interpretive paradigm. Thus, his observation represents another example of the espoused theory versus theory-in-use dilemma. As Bryant (2002) succinctly points out: “*We need to pay attention to what they do, rather than what they say they do*” (p. 34).

Strauss & Corbin (1998) seem to have taken cognisance of this when they state that:

“Our version of qualitative analysis offers a cluster of very useful procedures – essentially guidelines, suggested techniques, but not commandments. We also offer a methodology, a way of thinking about and studying social reality. True, only God can tell infallible humans the ‘real’ nature of reality” (p. 4).

Thus, what they espouse may appear as a set of rules, procedures, techniques and guidelines to be followed rigidly. In practice, the method is not supposed to be applied so mechanistically. Granted, for novice researchers the initial effort may be aimed at trying to apply the techniques described in a mechanistic way, but as experience is gained more mature use should evolve (Hughes & Jones, 2003). With this more mature use, the process involves iterating between various stages of data gathering, data analysis and report writing as the situation demands, applying various techniques as and when necessary, sometimes combining them with other techniques that the researcher may find appropriate. Thus, as with the application of soft systems methodology, “*every use of a systems [read: grounded theory] methodology will be both user-dependent and situation-specific*” (Checkland, 2002, p. 106). Indeed this mirrors the arguments of Introna & Whitley (1997) regarding the use of systems development methods, whereby they favour the “*the appropriate, skilled use of methodologies, tools and techniques which emerges from the involvement in the world as part of ‘getting the job done’ [read: research]*”. (p. 33). This is confirmed by Locke (2001) and Hughes & Jones (2003) who both note that the manner in which the grounded theory approach has been applied has been largely determined by the commitments of individual researchers, and the operational practices of their research approach. Urquhart (2002), in particular notes that many IS researchers have undertaken grounded theory studies from an interpretivist perspective, which is

perfectly feasible, she contends, as the grounded theory approach is essentially a method, whose philosophical base is not specifically articulated.

4.5.3 The Glaser versus Strauss debate

The key principles, procedures and techniques to be applied in deriving grounded theory are articulated in Glaser & Strauss (1967), Glaser (1992) and Strauss & Corbin (1990, 1998) in addition to other monographs. Glaser (1992) objected strongly to the rendition of the grounded theory method as described in Strauss & Corbin (1990) leading to the development of what are termed the Glaser versus Strauss camps amongst grounded theorists (Goulding, 2002). The differences between the two are largely subtle, however, and not entirely apparent to the average reader of their monographs (Glaser, 1992). Nevertheless, it is possible to outline the key points of contention. Glaser (1992) asserts that the ideas outlined by Strauss & Corbin (1990) produce forced, pre-conceived, full 'conceptual description', rather than grounded theory that emerges from data. Thus, his central bone of contention is that the principle of emergence is violated by some of Strauss & Corbin's (1990) suggestions. By way of example, he questions the necessity for categories to always have properties, dimensions and conditions, which is his interpretation of what Strauss & Corbin (1990) are suggesting. This, Glaser (1992) contends, should only emerge from the data, and not be pre-conceived. According to Locke (2001), the essential differences between the two are that Glaser tends towards "*more openness, flexibility, and more parsimony in the elaboration of necessary analytical steps*". Strauss, on the other hand, tends towards "*increased prescription and formal elaboration of operational procedures*" (Locke, 2001, p. 64). This is evident in the suggested use of detailed line-by-line microanalysis of data as one of the techniques prescribed by Strauss & Corbin (1998). As Glaser (1992) points out, going through such a procedure will result in over-conceptualisation of data incidents.

Duchscher & Morgan (2004), in comparing the two perspectives, assert that the Glaser approach to grounded theory development is devoid of interpretivism, given that theory is expected to emerge directly out of the data, whereas Strauss encourages questioning and supports an interpretive stance. Goulding (2002) on the other hand

describes the Glaser approach as interpretive, contextual and emergent, and the Strauss approach as highly complex, stressing systematic coding procedures. This may, then, explain the paradigmatic confusion with the approach (Urquhart, 2002).

The Strauss rendition of grounded theory methodology, as described in Strauss & Corbin (1998), was the main approach used in this study. The justification for this was the clear prescriptions and guidelines that were provided. Hughes and Jones (2003) note that such prescription is useful for researchers new to the method. Some of the concerns of Glaser (1992) and Goulding (2002) concerning the tendency of Strauss to be too prescriptive were addressed, however, by the manner in which the ideas of Strauss & Corbin (1998) were applied. For example, microanalysis as a technique was not used. The approach adopted was furthermore interpretive, and as pointed out by Hughes & Jones (2003) is perhaps the most appropriate for grounded theory studies. As a result, the manner in which the methodology was applied was not a purely Strauss approach, but was tailored to the objectives of the study within its context. Thus, a single grounded theory was not developed. Rather three theories were derived from slightly different perspectives, using the grounded theory methodology as the means to this end.

4.5.4 Grounded Theory Elements

The definition of grounded theory presented by Glaser & Strauss (1967), and Strauss & Corbin (1998), is very much in line with the received scientific view of theory (Locke, 2001), i.e., *“a set of well-developed concepts related through statements of relationship, which together constitute an integrated framework that can be used to explain or predict phenomena”* (Strauss & Corbin, 1998, p. 15).

As such, the essential elements of the theory are a set of **well-developed concepts** (e.g., **categories**), the statements of **relationship** between concepts, the integrated **framework**, and the **explanation** of phenomena embodied in the theory. Theories generated may be formal (conceptual) or substantive, with substantive theories more closely grounded in actual social situations (Locke, 2001).

Concepts are the building blocks of theory (Strauss & Corbin, 1998). Locke (2001) notes that these could be either descriptive or relational, where descriptive concepts describe the constituent parts of theory, and relational concepts describe relationships. It is probably better to think of these relational concepts as relational statements. Strauss & Corbin (1998) define higher order concepts as **categories**. Categories are much broader in scope than lower order concepts, and in fact represent a grouping together of similar or related concepts (Strauss & Corbin, 1998). They are often a necessary means of aggregating lower order concepts, given that in many substantive areas of study, there may be an inordinate number of these identified. **Sub-categories** are those that relate to a main category, and answer questions such as who, where, why, when, and how about that category (Strauss & Corbin, 1998).

Other related terms mentioned in the work of Glaser & Strauss (1967) and Strauss & Corbin (1998) include core categories, phenomenon, properties and dimensions (Locke, 2001). The **phenomenon** is defined as the central idea or event in the data related to a substantive area of study (Strauss & Corbin, 1998). It is thus synonymous with the term **core category**, these often being used interchangeably (Pandit, 1996). Categories may possess several characteristics. These characteristics are known as **properties** of the category. Each property may vary along a range, this being known as the **dimension** of a property (Strauss & Corbin, 1998). Given that a category is derived from aggregating several lower order concepts together, it is possible that these lower order conceptual elements may ultimately constitute the properties of a category by also considering the dimensions along which they may range (Strauss & Corbin 1998, Locke 2001). **Relationships** between categories are identified in order to build up the theory. An important aspect to note is that categories relate at the level of properties and dimensions (Strauss & Corbin, 1998). Thus between any two categories are potentially a large number of relationships, depending on the evidence presented by data.

The **explanation** or **story line** associated with the phenomenon is embodied in the theoretical framework. Strauss & Corbin (1998) point out that the explanation “*tells a story about the relations among things or people and events. To tell a complex story,*

one must designate objects and events, state or imply some of their dimensions and properties..., provide some context for these, indicate a condition or two for whatever action/interaction is selected to be central to the story, and point to, or imply, one or more consequences” (p. 124).

In order to develop a grounded theory containing all these elements, various procedures and techniques have been suggested, and are discussed in the next section.

4.5.5 Grounded Theory - Principles, Procedures and Techniques

i Constant Comparative Analysis and Theoretical Sampling

Hughes & Jones (2003) identify three concepts from grounded theory that are in harmony with interpretivist research – constant comparative analysis, theoretical sampling and theory. The concept of theory has been discussed at length in Chapter 2, and so will not be repeated. This section, therefore, will address the techniques of constant comparative analysis and theoretical sampling.

i. (a) Constant Comparative Analysis

Glaser & Strauss (1967) highlight the method of constant comparison as the major strategy used in discovering grounded theory. This technique is used as a means of (1) determining accuracy of data, (2) establishing limits of empirical generalization, (3) specifying a concept, (4) verifying theory, (5) generating theory (Glaser & Strauss, 1967).

To assess accuracy of evidence one incident (element of data) is compared with another. It is recognised that even if some evidence has inaccuracies, it is not too much of a problem, as in generating theory *“it is not the fact upon which we stand, but the conceptual category (or a conceptual property) that was generated from it”* (Glaser & Strauss, 1967, p. 23). Facts may change, but the conceptual property remains. The change of status of a fact represented as a concept may then be simply

variation of a property along a dimension. Constant comparison, when used to establish limits of generalisation may assess an incident of data by comparing it against other data points in different organisations, for example, to see if it is still applicable, or to ascertain what variation exists (Glaser & Strauss, 1967). To verify theory, constant comparative analysis can be used as a means of looking for other cases that confirm the existence of categories and propositions (Glaser & Strauss, 1967).

The major purpose of comparative analysis, however, is to generate theory (Glaser & Strauss, 1967). In this process, data are broken down into incidents, and these compared for similarities and differences. While doing so the question of what concept or property of category they represent is asked (Glaser, 1992). The aim is to assign a common meaning to multiple data incidents, which become a category (Locke, 2001). As concepts emerge and are named these are compared to other incidents in data, leading to the definition of properties of a category (Glaser, 1992). As such, there is a constant iteration between naming and comparing data incident to data incident, and data incident to concepts, in the light of a category (Locke, 2001).

In line with the principle of emergence, researchers should suspend any pre-conceived ideas and notions about the phenomenon under investigation, in order to allow the data 'to speak for itself' (Glaser & Strauss, 1967). It is recognized that it is impossible to ignore or pretend not to know what is already known, but in order to allow for creativity in naming and identifying concepts and categories, these should be held at bay (Locke, 2001).

In summary comparative analysis allows researchers to:

- Get a grasp on the meaning of events and happenings
- Be sensitive to possible properties and dimensions
- Identify further interview questions or required observations
- Move from description to abstraction
- Bring the analysis to a more abstract level
- Examine their assumptions, biases, and perspectives

- Perform a closer examination of the evolving theory
- Discover variation and general patterns
- Ensure a more fluid and creative stance towards data
- Link and densify categories

(Strauss & Corbin, 1998, p. 85)

i. (b) Theoretical Sampling

Goulding (2002) succinctly describes theoretical sampling as sampling directed by theory, as opposed to purely purposeful sampling, which is typically pre-determined before the start of the study. With theoretical sampling, the decision as to where and when to sample, and the size of the sample should be determined by the emerging theory, and should continue until each category identified in the theory is saturated (Glaser, 1992).

ii Using Literature

Glaser (1992) classifies the literature related to a substantive area of study as (1) Non-professional and popular and pure ethnographic description (2) Professional literature related to the substantive area of study (3) Professional literature, unrelated to the area of study (p. 31). Concerning the use of literature, there is agreement to some extent across the various monographs by Glaser and Strauss, jointly and separately (Glaser & Strauss 1967, Glaser 1992, Strauss & Corbin 1998).

The first classification, if purely descriptive and devoid of conceptualisation can be treated as data, in much the same way as interview transcripts (Glaser, 1992). Concerning the third classification, it is recommended that it is useful to read unrelated professional literature from the outset, in order to enhance theoretical sensitivity, raise awareness of the nuances of style, and to stimulate theoretical sampling (Glaser, 1992). Concerning related professional literature, however, it is suggested that researchers should not be too immersed in the literature prior to conducting a grounded theory study. As Strauss & Corbin (1998) note "*the researcher*

does not want to be so steeped in the literature that he or she is constrained or stifled by it. It is not unusual for students to become enamoured with a previous study (or studies) either before or during their investigations, so much so, that they are nearly paralysed in an analytic sense” (p. 49).

Glaser (1992) goes on to note that only once a grounded theory has begun to emerge from the data should the professional, related literature then be consulted and compared to the evolving grounded theory. He notes that areas of study may have very little published on them, or have an abundance. Where there is abundance, as is the case with strategic information systems planning (SISP), then, notes Glaser (1992):

“Grounded theory, we have found, typically transcends, organises and synthesises large numbers of existing studies. This is a contribution to be sure, since the two prime attributes of theory are achieved: parsimony and scope... The contribution in well-worked areas is usually not a new concept or pattern, since these are usually saturated. **It is the basic social processes that are missing which grab together so much into a conceptual grasp” (p. 34- 35).**

A point of difference arises when Strauss & Corbin (1998) suggest the following points regarding the professional literature, those highlighted in bold specifically:

- **Concepts derived from the literature can provide a source for making comparisons to data at the dimensional level.**
- Familiarity with literature can enhance sensitivity to subtle nuances in data, just as it can block creativity.
- Published descriptive materials often give very accurate descriptions of reality.
- Knowledge of existing theories can be useful under certain circumstances.
- **Literature can be used as a secondary source of data, especially where there are quoted materials from interview notes, etc...**
- **Literature can be used to formulate questions, before beginning a research project and stimulate questions during the process.**
- **Areas for theoretical sampling can be suggested by the literature, especially during early stages.**

- When in the writing stage of research, literature can be used to confirm findings or findings may highlight where literature is incorrect, simplistic or partial in explanation.

They, contrary to Glaser (1992), provide justification for using the professional related literature as a source of data, although still warning of the dangers of becoming too steeped in it, which inhibits emergence. Furthermore Urquhart (2002) states: “... *there is nothing in the GTM literature that specifically precludes looking at relevant literature before entering the field, and then conducting a further search in order to relate the theory produced to the literature*” (p. 50). Indeed, two major studies have used the related professional literature as the initial case in building grounded theory (Le Roux 2001, Pandit 1996).

In our study, a meta-analysis of literature in the area of study had already been conducted prior to the decision to use the grounded theory method. As such, we were very much cognisant of the need to suspend as much as possible this prior knowledge so as to allow theory to emerge from data during the grounded theory development phase. As with Le Roux (2001) and Pandit (1996), literature served as the first case to build grounded theory.

iii Coding Procedures

Coding represents “*the analytic processes through which data are fractured, conceptualised, and integrated to form theory*” (Strauss & Corbin, 1998, p. 3). Strauss & Corbin (1998) suggest three types of coding activities – open, axial and selective respectively. Although they will be presented as sequential processes, they are in practice performed iteratively, where the researcher moves between stages as demanded by the investigation. Locke (2001) refers to three stages related to coding: (1) Comparing incidents applicable to each category, (2) Integrating categories and their properties, (3) Delimiting the theory. These reflect the purposes of open, axial and selective coding, respectively.

iii. (a) Open Coding

Open coding is *“the analytic process through which concepts and categories are identified and their properties and dimensions are discovered in data”* (Strauss & Corbin, 1998, p. 101). Naming, comparing and the writing of memos are noted by Locke (2001) as the key activities that take place in this phase. Concepts are the basic building blocks of theory, and so the first task in developing it is seen as opening up the data to reveal and name these concepts (Strauss & Corbin, 1998). The constant comparative method described in Section 4.4.5 is the means used to achieve this, whereby comparing similarities and differences between data incidents yields discrete concepts, which are then given names (Strauss & Corbin, 1998). Locke (2001) suggests that comparisons be used as a means of developing a common name for multiple observations of data incidents, leading to more general rather than specific conceptual categories. The process of naming concepts and categories is a creative process, and names should be chosen so as to quickly remind a researcher of its referent (Strauss & Corbin, 1998). Where the names given are sourced directly from the data, they are referred to as “in vivo” codes (Strauss & Corbin, 1998). Glaser (1992) suggests that naming of categories be done using either “in vivo” words, or by using sociological constructs derived from an awareness and familiarity with the sociological literature.

According to Strauss & Corbin (1998), categories are developed by grouping similar concepts together into more abstract explanatory terms. Discrete concepts may then become properties or characteristics of a category, or may provide suggestions for such characteristics. The rationale for this higher order grouping is that categories are easier to remember, think about, and develop in terms of properties and dimensions, and can be further differentiated by breaking them down into sub-categories if necessary (Strauss & Corbin, 1998). Glaser (1992) has a slightly different view on this process, arguing that firstly identifying discrete concepts, and then grouping them into higher order categories is unnecessarily tedious and laborious. Rather, he suggests, through constant comparative analysis, broad-based categories should emerge, and then further comparative analysis will yield properties and dimensions of these. Furthermore, he asserts, the process of questioning suggested by Strauss & Corbin

(1990) leads to preconceived conceptual description, rather than grounded theory (Glaser, 1992).

Writing memos is seen by Locke (2001) as a useful aid to articulating and drafting conceptual categories. As she states: *“recording a memo on the emerging ideas captures these fresh theoretical musings and gives us analytical space to reflect and to work out these ideas. In this way, the act of free form memoing of thoughts, hunches and reactions to the data helps us to literally write our way to naming what we perceive in this data”* (p. 51).

iii. (b) Axial Coding

Axial coding is defined as *“the process of relating categories to their sub-categories, termed “axial” because coding occurs around the axis of a category, linking categories at the level of properties and dimensions”*. (Strauss & Corbin, 1998, p. 123). A sub-category in this instance, is subordinate to a main category or phenomenon, in that it answers questions such as who, where, when, why and how about that category (Strauss & Corbin, 1998). For this stage of coding, two major activities are intimated – firstly, more clearly defining categories in terms of their properties and dimensions, especially those that are viewed as core; secondly, examining how categories relate to each other in order to develop the theoretical framework (Locke, 2001). The former activity is one that has already begun during open coding (Strauss & Corbin, 1998). Locke (2001) suggests that during axial coding less time be spent comparing data incident with data incident, and that more attention be focused on comparing data incidents with the conceptual categories that have emerged, resulting in richer descriptions of properties and dimensions in relation to core categories. The latter activity centres around relating a category to its sub-categories, whilst also looking further at how major categories might relate - a process that leads into the next stage labelled selective coding (Strauss & Corbin, 1998).

In axial coding, Strauss & Corbin (1998) suggest the use of a paradigm model to identify how a category relates to its sub-categories. A paradigm model is defined as *“a pattern or scheme for understanding and showing how categories could be related*

to each other around a particular phenomenon” (Le Roux, 2001, p. 109). Such a model helps to integrate structure (the conditional context in which a phenomenon is situated), with process (sequences of action/interaction pertaining to a phenomenon) (Strauss & Corbin, 1998). The paradigm model advocated by Strauss & Corbin (1998) has the following structure – Concerning any one **phenomenon** (main category), routine or strategic **actions/interactions**, give rise to certain **consequences**. **Causal conditions** are those categories that have an influence on the phenomenon, and thus on the actions/interaction of subjects, whilst **intervening conditions** limit the impact of causal conditions on the phenomenon. **Contextual conditions** are the “*specific sets of conditions (patterns of conditions), that intersect dimensionally at this time and place to create the set of circumstances or problems to which persons respond through actions/interactions*” (Strauss & Corbin, 1998, p. 132). Glaser (1992) defines it more simply as “*a condition of overriding scope, under which a set of related categories and properties occur*” (p. 65).

Glaser (1992) views this use of the paradigm model as leading to forced, rather than emergent theory, but as noted by Strauss & Corbin (1998), the purpose of a paradigm model is to gain a better understanding of how a phenomenon relates to sub-categories. As such each category may serve as one or more of a causal condition, intervening condition, action/interaction or consequence, depending on the main category being investigated. It is therefore **not** the intent that as a category emerges during open coding it be assigned the label of causal, intervening, consequence, *etc.* Furthermore, in accordance with the principle of emergence, any relationships identified should arise from the data, although actual linking takes place conceptually at the level of properties and dimensions of categories (Strauss & Corbin, 1998).

Usually coding proceeds until theoretical saturation is achieved, where by gathering additional data, nothing substantially new emerges. The theory that is formed therefore represents the aggregate of data collected, rather than the view and perspective of only one data source (Strauss & Corbin, 1998).

iii. (c) Selective Coding

Strauss & Corbin (1998) define selective coding as the process of integrating and refining the theory. Glaser (1992) elucidates its meaning by noting that “*to selectively code is to cease open coding and to delimit coding to only those variables that relate to the core variable, in sufficiently significant ways to be used in a parsimonious theory*”(p. 75). Part of the process of selective coding according to Strauss & Corbin (1998) is the identification of a central category. Such a category, they assert, must be central, in that all other major categories relate to it, and that with almost all cases there are indicators pointing to it. It should also be able to explain variation, and even contradicting evidence (Strauss & Corbin, 1998).

Techniques suggested for integrating the central category with the other related categories include writing a story line, drawing diagrams, reviewing and sorting through memos (Strauss & Corbin, 1998). A story line is the conceptualisation (abstraction) of a descriptive story (Pandit, 1996). It should therefore be expressed in terms of the categories and the properties and dimensions identified through the coding process. Once again, the paradigm model can be employed to clarify and refine relationships around the central category (Pandit 1996, Le Roux 2001).

In refining the theory, Strauss & Corbin (1998) suggest the following: Review the conceptual schema for internal validity and logic; fill in poorly developed categories; trim excess categories; and validate the schema, through, for example, a high level comparative analysis with the data. The final theory may be represented as a set of propositions or as a running theoretical discussion (Glaser & Strauss, 1967).

4.5.6 Grounded Theory in IS Research

Although initially developed for use in the field of sociology grounded theory has since been applied to diverse fields including psychology, anthropology, nursing, social work, education, management (Goulding, 2002), and importantly for this study, information systems (Hughes & Jones, 2003). A few examples follow.

The most widely known example of the grounded theory method being applied in information systems research is the study by Orlikowski (1993). In it she investigated

the adoption and use of CASE tools in two organisations that were similar in that they had both adopted CASE tools, but different in terms of their organisational conditions. The grounded theory method was applied interpretively, and lead to the production of a theory explaining the CASE tool adoption process. The theoretical framework consisted of categories related to context, causal conditions, actions and consequences, and thus was represented in a similar manner to the paradigm model suggested by Strauss & Corbin (1998).

De Vreede *et al.* (1999) reported on a study in which they used the grounded theory method to explore the acceptance of group support systems (GSS) in Africa. They also employed what was an interpretivist approach to grounded theory development. However, constant reference was made to the TAM (technology acceptance model), and mention was made of how their emergent theory extended this model. This apparent paradox of inductively emergent theory at the same time being an extension of existing theory was noted by Bryant (2002). Interestingly too, De Vreede *et al.* (1999) indicated that open coding was used to analyse the data, but no mention was made of axial or selective coding, or the techniques related to them. The final theoretical framework illustrated 5 factors that were found to have an influence on the acceptance of GSS in Africa.

Hughes & Jones (2003) reported on a study concerning the use of IS evaluation methods in 2 public sector councils in the UK. Once again interpretivism was the methodological approach in which the grounded theory method was applied. The authors reported on the development of a hierarchy of categories, leading to a theory of decision-making concerning IS and evaluation.

Finally Le Roux (2001) applied the grounded theory method, also in an interpretivistic manner, to an investigation that aimed to develop an understanding of management's dissatisfaction with IT value. The initial case for the development of a preliminary framework was the related professional literature. Two other cases were then investigated to adjust and refine the framework. The grounded theory method as described by Strauss & Corbin (1990) was employed, with the paradigm model being a key means of representing and refining the theory.

Although this is not an exhaustive *exposé* of all IS studies that have used the grounded theory method, it is noteworthy that of those examined, all were based on the interpretive paradigm, which as Hughes & Jones (2003) suggest is where there is perhaps a best fit with the grounded theory method. In each case, the method has been applied in slightly different ways, which attests to the efficacy of using the approach flexibly, in line with the particular context, research approach and researcher perspective (Locke, 2001). As such this study will also employ the grounded theory methodology interpretively, and its actual application will be user-dependent and context-specific (Checkland 2002, Hughes & Jones 2003).

4.6 Research Objectives and Research Procedure

Despite decades of research effort, improving SISP continues to be ranked as a key IS management issue, not only in the developed North, but globally (Niederman *et al.* 1991, Baker 1995, Pervan 1996, Watson *et al.* 1997, Pimchangthong *et al.* 2003, Hart *et al.* 2004, Luftman & Mclean 2004). Part of the reason for this continued concern is that there is no strong theory underpinning SISP (Lederer & Salmela 1996, Lamprecht 1997). As such a comprehensive investigation into the theory informing SISP was deemed necessary. Such a study was also timely given the recent calls for more theory-building rather than theory-testing research in the IS field (Weber, 2003).

4.6.1 Research Objectives

The detailed objectives of the study were to:

- Generate distinct theoretical frameworks that reflect three different views of SISP -
 - a. the academic literature (conceptual theory);
 - b. the espoused views of IS planners (espoused theory);
 - c. the practices (in use views) of IS planners (theory-in-use);
- Compare the espoused theory with theory in use;
- Compare the conceptual theory with the espoused and in use theories;
- Draw conclusions from the different comparisons.

The use of grounded theory methodology was informed by the following considerations:

- Firstly, in order to come up with theoretical frameworks, a method whose specific purpose was generation of theory was necessary – thus the choice of the grounded theory methodology.
- Prior theory on SISP has tended to be too abstract and perhaps too parsimonious, thus it was deemed necessary to generate rich contextual theories about SISP to more clearly elucidate this complex phenomenon. Once again the grounded theory method was deemed suitable for this purpose.
- Three different views of SISP were being investigated (academic literature, espoused and in use). In order for the similarities and differences between them to be more clearly defined, it was important that theories emerge from each of the views, rather than being forced through a pre-defined framework. The principle of emergence is central to the grounded theory methodology.
- Finally espoused theories and theories-in-use are defined as theories of action (Argyris & Schon, 1974). For the theories to be a fairly accurate reflection of the espoused and in use actions associated with SISP, grounded theories closely related to the data were required.

Pandit (1996) and Le Roux (2001) used literature as an initial case to generate a preliminary theoretical framework, but then extended and embellished this by gathering and analysing data from other sources as well. This study differs in that the theory emerging from the literature case will not be extended with data from the field, but will stand on its own as a representation of conceptual theory. Two types of data from the field will then be gathered – espoused views of IS planners, and in use views. These will each be used to develop an espoused theory of SISP and a theory in use, respectively. The three distinct theories will then be compared, so as to gain further insight into SISP, and how it can be improved.

The study thus consisted of two main procedures – that for the literature case (to develop a conceptual theory), and that for the field studies (to develop espoused theory and theory in use). Each procedure will be discussed in turn.

4.6.2 Procedure for the Literature Case

Prior to the decision to use the grounded theory methodology, a meta-analysis of SISP had been performed (see Chapter 3). The base data for the meta-analysis were 137 articles on SISP published in academic journals between 1991 and 2002. The articles were by no means the complete set related to SISP, but represented most of the research published in peer-reviewed outlets. In order to conduct the meta-analysis, a guiding theoretical framework was employed (that of Lederer & Salmela, 1996). Extensions to the theory were uncovered in the form of additional cause-effect relationships not included in the guiding framework. Since the data was forced to fit into categories supplied by the guiding framework, no new categories were identified.

In order to avoid the imposition of a specific framework on the literature data, as was done with the meta-analysis, and to allow for identification of relationships that are not only cause-effect, a grounded theory approach was deemed more appropriate. It thus required that the prior knowledge gained through meta-analysis be suspended to a certain extent to allow for emergence through the new analysis (Strauss & Corbin, 1998). Applying the grounded theory to all 137 articles would have been too time-consuming and might not have been appropriate in all cases. As a result, 27 key articles were selected to represent the initial basis for grounded theory analysis. This was defined as the initial literature case (Pandit 1996, Le Roux 2001). The key articles were chosen based on the following criteria:

- *Breadth of coverage* – Articles had to address SISP holistically, and provide a gestalt perspective, rather than be narrowly focused on a few concepts.
- *Extent of description* – Articles that provide rich description (e.g., case studies) often give very accurate descriptions of reality (Strauss & Corbin, 1998).

- *Minimal theoretical focus* – Conceptual articles that outlined broad theoretical frameworks were avoided, as they would have imposed a pre-defined structure on the data.

The remainder of the 137 articles were not totally excluded from the analysis, as they provided data for constant comparative analysis and a source of “in vivo” labels, once theory started to emerge from the initial 27 seed articles.

The analysis proceeded through open coding to identify categories and their properties, axial coding to develop these and identify relationships between categories, and selective coding to refine and integrate the theory into a framework. An iterative cycle was employed whereby there was movement between stages, as the analysis proceeded. A spreadsheet was used to assist in recording and sorting the data. Apart from this no other software tools were used to assist in coding, this being the preference of the researcher.

The procedure followed for the literature case is summarised in Table 4.2 below, in a reporting style similar to that of Pandit (1996). It must be noted that the process was not linear, but iterative. The results of carrying out the procedure are reported in Chapter 5.

Table 4.2: Phases and Activities in Grounded Theory Analysis of Literature

Phases and Activities	Rationale
DATA COLLECTION	
Review of professional literature to assess the scope and usefulness of articles.	Articles that address SISP holistically and descriptively were required.
Select articles to represent initial basis for literature case	The number of articles must not be too excessive. 27 met the criteria and were deemed sufficient.
Identify useful data by looking for description and direct quotes in chosen articles.	<i>"Research publications often include quoted materials from interviews and field notes...The publications might also include descriptive materials...that can be used as data..."</i> (Strauss & Corbin, 1998, p. 51).
DATA ANALYSIS	
Analyse initial data by applying open coding, axial coding and selective coding.	Develop a preliminary grounded theory
Sample theoretically by looking outside of the 27 articles for literature to more sharply define concepts, categories and relationships (Pandit, 1996).	Some articles address specific categories in great detail, allowing for more complete identification of properties, dimensions and relationships of categories emerging from initial literature
Reach Closure	Once saturation of major categories is achieved the theoretical framework has been developed.

4.6.3 Procedure for Field Studies

When conducting interpretive grounded theory field studies, data may be either qualitative or quantitative, and may come from various sources, typically documents, interviews or descriptive accounts (Pandit, 1996). Espoused theory was defined, in Chapter 2, as that to which a person gives allegiance and vouches for if asked (Argyris & Schon, 1974). Whilst much of the literature on organisational learning gives little attention to espoused theory, focusing more on theory in use, in this study it was given heightened importance since it was taken to represent the beliefs and values IS planners held about how SISP should be carried out. This perspective on espoused theory is informed by Senge (1990), who note that espoused theory may be

part of a vision of where one would like to be, as compared to where one is currently. If the ideals of the espoused theory are of value and are worth pursuing, then the creative tension between the two will lead to motivations for action. The most appropriate means for eliciting data pertaining to espoused theory was seen to be interviews.

Theory-in-use is defined as that which actually governs behaviour (Argyris & Schon, 1974). It is sometimes tacit and difficult to explain, thus asking a person what their theory in use is may yield only an approximation. Ciborra (1999), however, intimates that the hidden, underlying motives and rationale for actions (equivalent to theory in use) can be obtained by an agent reflecting on an experience after the fact. Observation of behaviour is suggested as an alternative means of getting at theory in use (Argyris & Schon, 1974). Even then, however, it is recognised that the observed behaviour corresponding to a theory in use may not always manifest, for example, if something happens that prevents a person from performing the behaviour (Argyris & Schon, 1974). Furthermore, the very act of observation may cause a person to alter behaviour. As such observation too may yield only an approximation. Argyris & Schon (1974) have developed exercises (*e.g.*, the left-hand column method) that allow a theory in use to be made more explicit as a means of helping an individual to learn more effectively in order to improve on professional practice. Both observation as well as techniques such as the left-hand column method were deemed infeasible as a means of gathering data (see Chapter 2), thus a decision was made to use the interview technique, as with the espoused theory. As suggested by Ciborra (1999), respondents were asked to reflect on the recent past experiences of SISP in order to make explicit their theory in use.

SISP is organisational in scope, and thus typically involves diverse stakeholders. As such, a theory in use of SISP may be conceptualised as being for the organisation as a whole, rather than pertaining to an individual. IS planners (typically Managers and CIOs) are in many instances responsible for driving and facilitating the process and are therefore influential in determining its nature and characteristics. In much research their description of SISP is taken to represent the organisational reality (Segars *et al.*, 1998). In this study, it was the actions and practices of the IS planners regarding SISP

that were of prime interest, and so their views on this matter were sought. To make better sense of what unit of analysis was to be investigated (individual, organisation, or both) the following definitions were adopted:

Espoused Theory – The explanation *by the IS planner* of the way *he/she* believes planning *should be* done, what *he/she* believes works, and why.

Theory in use – The explanation (by the IS planner) of *how planning was actually carried out in their experience*, and the *reasons why*.

The weakness of the procedure is that theory pertaining to the organisational phenomenon of SISP is developed on the basis of an individual's (the IS planner's) views. It could be strengthened through obtaining alternative views, by examining corporate documents (espoused organisational view), and by observing/examining decisions (and actions) related to SISP (*e.g.*, IS implemented, SISP plan documents, *etc.*). This was outside the scope of the study, and the interview data, which was gathered through 7 different interviews, provided a wealth of information useful for comprehensive analysis.

i Interview Design

Interviews may be of various types, ranging from highly formalised and structured at one extreme to informal and unstructured at the other (Saunders *et al.*, 2000). In between the two extremes are semi-structured interviews. Interviews may also be either face-to-face or telephonic.

In this study, the aim of the interviews was to gather data from IS planners (or ex-IS planners) concerning what they espouse, and what they had done in practice with regards to SISP. The only criterion for selecting interview candidates was that they were to have had some experience of SISP. Thus, their position, and the type of industry worked in were not of prime importance.

Sufficient information had to be gathered to enable the derivation of an espoused theory and a theory in use from the data. As such, a semi-structured, face-to-face interview was chosen as the format to be used. This allowed for the interviewer to focus the interview, whilst giving the interviewees enough opportunity to express their beliefs and reflect on their practices regarding SISP.

A schedule of possible questions was developed keeping in mind the definitions of theory identified in Chapter 2. For example, Argyris & Schon (1974) defined theories of action as having the following form: "*In situation S, if you want to achieve consequence C, under assumptions a1...an, do A*" (p. 6). Similarly, when developing grounded theory, contextual conditions, causal conditions, actions/interactions, and consequences may be identified (Strauss & Corbin, 1998). The structurational view of SISP (Lamprecht, 1997) emphasised the social nature of SISP, so these aspects were also considered. Questions were furthermore chosen so that the context, consequences, rationale and actions performed were all addressed from the perspective of what the respondents believed should be done (espoused), and what was done in practice (in use), respectively. The elements of "Why", "What", "How" and "Who", "Where" and "When" were considered, so as to address all aspects related to explanation of a phenomenon (Whetten, 1989). The literature had been extensively analysed, and tended to suggest that SISP be viewed from the perspective of activities to be performed (Lederer & Sethi, 1996), as well as in terms of characteristics of the process (Segars & Grover, 1999). Thus questions were asked to also cover both these aspects.

The first section on the interview schedule gathered demographic information about the respondent and the organisation that they had worked in at the time planning was done, as well as its IS function. Interview questions then followed. Since the interviews were deliberately semi-structured, questions were not asked systematically and rigorously, allowing for the respondent to emphasise areas that were important to them, and even allowing for other questions not on the schedule to be asked, in order to illuminate their perspective on SISP. Appendix 4 shows the Interview structure, as well as the rationale for each question, and how it addresses either espoused theory or theory in use.

ii Field Study Phases and Activities

The collection of data was carried out through approximately 1-hour interviews, which were tape-recorded. In one case the Dictaphone used for recording the interview malfunctioned, and so notes were taken down during the interview. The initial interview served also as a pilot study, allowing for a refinement of the questionnaire schedule. As a result, it tended to be more unstructured than subsequent interviews. These subsequent interviews were selected so as to be representative of SISP in a wide variety of different contexts.

After each interview the recorded data was transcribed. A distinction was made between what were deemed to represent espoused views and in use views before preliminary analysis and grounded theory analysis took place. The preliminary analysis allowed the researcher to become familiar with the data, and to identify key themes. As with the literature case, a spreadsheet was used to assist with recording and sorting data, especially during open coding. The results of each interview served to provide a focus for the following interview, in order that a balance between espoused and in use views was achieved, and in line with the principle of theoretical sampling (Pandit, 1996).

The initial three interviews were conducted in close sequence, and served the purpose of filling theoretical categories in order to develop the emerging theories (Pandit, 1996). They were analysed more or less as one batch. Three more interviews were then conducted in close proximity and two of the three (those considered to have provided the richest data at that stage) were then also coded so as to further saturate the categories. At that stage the espoused theory and theory in use began to take shape, as the main categories, their properties and relationships had emerged. The final seventh interview was conducted and the data coded simultaneously with the remaining interview data that had not previously been coded. This final set of data served to test the emerging theory, which by that stage was almost saturated. Subsequently, no new major categories or relationships emerged.

A tabular summary of the field study procedure is supplied in Table 4.3.

Table 4.3: Procedure for Collection and Analysis of Field Data

Phases and Activities	Rationale
DESIGN	
Decide on technique for collecting data for generating espoused theory and theory in use.	Espoused theory is what people say they believe and do, so can be elicited through interviews. Theory-in-use is more difficult to access, and so advantages and disadvantages of alternatives need be addressed. Semi-structured, face-to-face interviews were finally chosen.
Develop schedule for Interviews	For semi-structured interviews, a schedule is still required to guide and focus the interview.
DATA COLLECTION	
Contact potential candidates and arrange for interviews.	Candidates were to have had some form of SISP experience, and were typically IS Managers or the equivalent.
Conduct 1-hour interviews, using a dictaphone to record proceedings (in one case, notes were written down, as the dictaphone malfunctioned)	Most candidates were willing to give at least 1 hour of their time, which was found to be sufficient to address the key beliefs and practices of the IS planners.
Transcribe interview data, distinguishing between espoused and in use views	Although the interview schedule laid out questions related to espoused views first, then in use views, during the interviews, these were very much intertwined as respondents made constant comparisons between the two.

Table 4.3 (ctd.)

Phases and Activities	Rationale
DATA ANALYSIS	
Conduct preliminary analysis, by identifying themes, and comparing espoused and in use views per interview firstly, and then based on the aggregated data.	Such a preliminary analysis allows for immersion in the data, and sensitises the researcher to key themes, that may become categories in the grounded theory analysis.
Analyse data pertaining to espoused views by applying open coding, axial coding and selective coding. Repeat the process with in use views.	Develops a preliminary grounded theory of the espoused views, and in use views, respectively.
Sample theoretically by analysing the data as it is collected and transcribed, using the initial analysis to inform the next interview	Some interviewees focus attention on specific categories in great detail, prompting the researcher to focus attention on other less-developed categories in future interviews. Also some tend to focus on espoused views, whilst others on in use practices.
Reach Closure	Once saturation of major categories is achieved the theoretical framework has been developed.

4.6.4 Demographic Profile of Candidates and Selection Criteria

The key demographic factors from the seven interviews are summarised in Table 4.4. The number of interviews conducted was guided by the principle of theoretical sampling (Strauss & Corbin, 1998). As such, interviews were carried out until the espoused theory and theory in use had reached a high level of saturation.

All respondents had prior SISP experience. This was the only criterion for selecting candidates to be interviewed. They all were (or had previously been) in managerial positions, with 2 being at the level of CIO at the time planning was done. 4 were at the director level, and 2 were managers. The SISP experience of respondents varied from 2 to 25 years. In addition, being guided by the principle of theoretical sampling, informants were chosen so as to represent experiences from diverse industries varying from the commercial to public sector. Specific industries represented included retail, finance, higher education, public services and IT services.

All interviewees responded with regards to their experiences in large organisations, where the number of employees was in the order of thousands. The size of the IS departments varied from 17 to 250, but not always in proportion to the size of the organisation.

The diversity of respondents from varying organisation types and with diverse experiences allowed for the development of overarching SISP theories that took into account contextual factors. As such, the research objective of establishing rich theories about SISP, reflecting espoused beliefs and practices respectively could be addressed.

Table 4.4: Summary of Key Demographic Factors

Interview	Respondent Level when Planning was done	SISP Years Experience	Approx. Organ. Size (Employees)	Organ. Type	Organ. Structure	IS Function Size	IS function Structure
A1	CIO	14	5,000	Financial	Central	250	Federal
B2	CIO	12	4,000	Higher Education	Federal	115	Flat
C3	Director	8	30,000	Retail	Federal	170	Central
D4	Director	25	N/A	IT Outsourcing	N/A	65	Flat
E5	Director	2	300	IT Services	Subsidiary	150	Hierarchical
F6	Manager	2	2,700	Prov. Govt. Dept.	Central	17	Central
G7	*Managers	20	100,000	Prov. Govt.	Matrix	100	Decentral

* 2 candidates attended the interview.

The results of the analysis of both literature data and field interview data are reported on in Chapter 5 below, and conceptual theory, espoused theory and theory in use are developed and compared.

Chapter 5 Results and their Analysis

5.1	Development of Grounded Theory from the Literature Case.....	121
5.1.1	Open Coding.....	123
5.1.2	Axial Coding.....	126
5.1.3	Selective Coding.....	136
5.1.4	Theoretical Outcome of Analysis	141
5.1.5	Discussion and Implications.....	147
5.2	Preliminary Analysis of Empirical Interview Data – A Summary	149
5.2.1	Synthesis and Integration of Espoused Views.....	150
5.2.2	Synthesis and Integration of Reflections on Practice (In Use Views).....	165
5.2.3	Comparison between Espoused Views and Views on Practice (In Use Views)	175
5.3	Using Grounded Theory to Develop Espoused Theory.....	185
5.3.1	Open Coding.....	185
5.3.2	Axial Coding.....	188
5.3.3	Selective Coding.....	192
5.4	Using Grounded Theory to Develop Theory in Use.....	200
5.4.1	Open Coding.....	200
5.4.2	Axial Coding.....	203
5.4.3	Selective Coding.....	209
5.5	Comparing Espoused Theory and Theory in Use.....	218
5.5.1	Business Planning and its Effects	218
5.5.2	External Environment and its Effects	222
5.5.3	Organisational Context and its Effects	226
5.5.4	IS Function and its Effects.....	231
5.5.5	SISP Process and its Effects	235
5.5.6	Stakeholder Profile and its Effects	240
5.5.7	Management & Mindset and its Effects	244
5.5.8	IS Plans & Strategies and their Effects.....	245
5.5.9	IS Plan Implementation and its Effects	246

5.5.10	Alignment and its Effects	248
5.5.11	SISP Outcomes and their Effects.....	249
5.5.12	Overall Comparison.....	250
5.6	Comparing Conceptual Theory, Espoused Theory and Theory in Use.....	257
5.6.1	Categories	257
5.6.2	Comparison of Relationships between Categories	273

In this Chapter the development of a conceptual theory derived from key articles in the academic literature will be reported, followed by the development of espoused theory and theory in use from field interview data. The latter two theories will be compared and contrasted, followed by a comparison of both with the conceptual theory. In the process, conclusions will be drawn.

5.1 Development of Grounded Theory from the Literature Case

Having done an extensive qualitative and quantitative meta-analysis, the concepts and categories that had been previously researched and their relationships were already well known and familiar to the researcher. The prior analyses, however, had assumed a pre-existing input-process-output framework for SISP, a set of categories to be investigated and an assumption of cause-effect relationships. Employing grounded theory to analyse the literature offered an opportunity to conceptualise SISP in a new and novel way, in order to come up with an all-encompassing theory. It did not assume an input-process-output framework, but allowed the framework to emerge from the data (literature). Also, there was no presumption of a prior set of categories, and of cause-effect relationships, as these were to be identified through the analysis. It was expected that many of the salient concepts and categories would already have been well defined in the literature, given the amount of research already conducted in the domain (Glaser, 1992). However, it was hoped that new insights and better processual explanation of the phenomenon would emerge. An initial version of this analysis was reported in Brown & Roode (2004).

In commenting on the use of technical literature as a data source, Strauss & Corbin (1998) note that literature can be used as a secondary source of data, and that published descriptive materials often give very accurate descriptions of reality. On the other hand, they warn against being too steeped in the literature, as this will limit the ability to think creatively about new concepts and categories emerging from data gathered through fieldwork.

This analysis differs from conventional grounded theory analysis, in that the literature serves as the only source of data for the time being. In selecting articles, the guiding principle was to identify as much as possible those that address SISP holistically, rather than those focusing on only one or two concepts and/or relationships. In total, 27 articles formed the basis for data analysis, these ultimately representing the writings of some of the major researchers in SISP over the past decade or so (*e.g.*,

Galliers, Lederer & Sethi, King, Teo). The papers analysed are given in Table 5.1 below:

Table 5.1: Article Sources

Reference	Title
Ang <i>et al.</i> (1995):	Identifying strategic management information systems planning parameters using case studies.
Cerpa & Verner (1998)	Case study: The effect of IS maturity on information systems strategic planning.
Doherty <i>et al.</i> (1999)	The relative success of alternative approaches to strategic information systems planning: an empirical analysis
Earl (1993)	Experiences in strategic information systems planning.
Fink (1994)	Information systems planning in a volatile environment.
Flynn & Goleniewska (1993)	A survey of the use of strategic information systems planning approaches in UK organisations.
Flynn & Hepburn (1994)	Strategic planning for information systems - a case study of a UK metropolitan council.
Galliers (1991)	Strategic information systems planning: myths, realities and guidelines for successful implementation.
Galliers (1993)	Towards a flexible information architecture: integrating business strategies, information strategies and business process redesign.
Galliers <i>et al.</i> (1994)	Strategic information systems planning workshops: Lessons from three cases.
Galliers & Baker (1995)	An approach to business process reengineering: The contribution of socio-technical and soft OR concepts
Hann & Weber (1996)	Information systems planning: A model and empirical tests.
Lederer & Sethi (1991)	Critical dimensions of strategic information systems planning.
Lederer & Sethi (1992)	Root causes of strategic information systems planning problems.
Lederer & Sethi (1996)	Key prescriptions for strategic information systems planning.
Lederer & Sethi (1998)	Seven guidelines for strategic information systems planning.
McGrath <i>et al.</i> (1994)	Planning for information systems integration: Some key challenges.

Table 5.1 (ctd.)

Reference	Title
Ormerod (1996)	Putting soft OR methods to work: Information systems strategy development at Richard's Bay.
Premkumar & King (1991)	Assessing strategic information systems planning.
Premkumar & King (1994)	Organisational characteristics and information systems planning: An empirical study.
Reich & Benbasat (2000)	Factors that influence the social dimension of alignment between business and information technology objectives.
Sabherwal & King (1995)	An empirical taxonomy of the decision-making processes concerning strategic applications of information systems.
Salmela <i>et al.</i> (2000)	Information systems planning in a turbulent environment.
Segars & Grover (1999)	Profiles of strategic information systems planning.
Sillince & Frost (1995)	Operational, environmental, and managerial factors in non-alignment of business strategies and IS strategies for the Police Service in England and Wales.
Teo & King (1997)	Integration between business planning and information systems planning: An evolutionary-contingency perspective.
Teo & King (1999)	An empirical study of the impacts of integrating business planning and information systems planning.

Other articles were not totally excluded, as they served as a basis for comparative analysis and verification, and as sources for “in vivo” concepts (Strauss & Corbin, 1998).

5.1.1 Open Coding

During the first iteration of open coding, 480 concepts were identified. By comparative analysis, and removal of duplicates, these were reduced and refined into 83 discrete concepts. The concepts were then grouped into higher order categories. There were initially 17 categories identified, but for the sake of parsimony these were reduced to 11. The Alignment and IS Plan Categories were subordinate to the Outcomes category, thus in effect 9 major categories were identified. Each category was delineated in terms of its properties and dimensions. Table 5.2 below shows the categories and their key properties. Other articles were referred to in order to clarify the definition of concepts and categories.

Table 5.2: Categories, Properties and Dimensions

Category	Major Properties (and Dimensions) (example of Source)
Business Planning System	Level (Operational to Strategic) (Lederer & Sethi, 1991) Quality (Non-existent to Detailed) (Premkumar & King, 1991) Cycle (Once-off to Continuous) (Cerpa & Verna, 1998) Horizon (Short to Long-term) (Flynn & Goleniewska, 1993) Business Plan Status (Obsolete to Up to date) Business goal clarity (Clear to Ambiguous) (Sillince & Frost, 1995)
External Environment	Uncertainty (Low to High) (Teo & King, 1997) Dynamism (Stable to Changeable) Heterogeneity (Homogeneous to Diverse) Hostility (Benign to Intense) IT Activity Intensity (Low to High) (Ranganathan & Sethi, 2000)
IS Function Characteristics	IS Role (Operational to Strategic) (Premkumar & King, 1994) CIO level (Operational to Strategic) Business Competence (Low to High) (Teo & King, 1997) IS Competence (Low to High) (Teo & King, 1997) Formalisation (Informal to Bureaucratic) (Ranganathan & Sethi, 2002) Structure (Decentralised to Centralised) (Ranganathan & Sethi, 2002) Maturity (Immature to Developed) Past successes (Rare to Regular) (Reich & Benbasat, 2000) Function size (Small to Large) (Teo <i>et al.</i> , 1997)
Organisational Characteristics	Communication channels (Poor to Good) (Cerpa & Verna, 1998) Culture (Non-planning to Planning) (Sahraoui, 2003) Dynamism (Static to Rapid) (Teo & King, 1997) Political Turbulence (Low to High) (Galliers <i>et al.</i> 1994) Formalisation (Informal to Bureaucratic) (Sabherwal & King, 1995) Structure (Decentralised to Centralised) (Cerpa & Verner, 1998) Size (Small to Large) (Premkumar & King, 1994) Geographic dispersion (Local to Global)

Table 5.2 (ctd.)

Category	Major Properties (and Dimensions) (example of Source)
SISP Process	Adaptation (Rigid to Flexible) (Segars & Grover, 1999) Rationality (Low to High) (Segars & Grover, 1999) Rational-Adaptation (Imbalanced to Balanced) Quality (Poor to Detailed) (Premkumar & King, 1994) Integration with business planning (None to Full) (Teo & King, 1997) Goal Clarity (Ambiguous to Well-defined) (Sillince & Frost, 1995) Alacrity (Drawn out to Rapid pace) (Lederer & Sethi, 1998) Environmental fit (Misfit to good fit) (Sabherwal & King, 1995) Organisational fit (Misfit to good fit) (Sabherwal & King, 1995) Evaluation mechanisms (Non-existent to Sophisticated) (Galliers 1991, Baker 1995) Methodology mix (Single method to multi-method) (Fink, 1994) Methodology selection criteria (Informal to Formal) (Galliers, 1991) Consultant role (Minimal to Major) (Ormerod, 1996)
Stakeholder Profile	Cohesion (Loose to Tight) (Galliers <i>et al.</i>, 1994) Involvement (Low to High to Excessive) (Basu <i>et al.</i>, 2002) Representivity – Horizontal (IT to Cross-functional) (Segars and Grover, 1999) Representivity – Vertical (Top only to Broad) Role definition (Ambiguous to Clear) Skill level (Unskilled to Competent) Champion (None to Presence) Shared domain knowledge (Mismatch to Congruent) (Reich & Benbasat, 2000) Consultant engagement (Misunderstood to Well-defined) Commitment (Lacking to Sufficient) Mutual IS/Business participation (No interaction to Mutual)
IS Plan Implementation	Difficulty (Major to Minor) (Lederer & Sethi, 1992) Extent (Minimal to Full) (Gottschalk, 1999a) Rate (Below par to On Track) (Gottschalk, 1999a) Mechanism Quality (Poor to Enabling) (Premkumar and King, 1994) Unplanned implementation (Rare to Often) (Lederer & Sethi, 1996)

Table 5.2 (ctd.)

Category	Major Properties (and Dimensions) (example of Source)
SISP Outcomes	Satisfaction (Planner only to Broad-based) (Lederer and Sethi, 1996) Effectiveness (Unfulfilled objectives to Fulfilled) (Premkumar and King, 1994) Capability Improvements (None to Major) (Segars and Grover, 1999) IS contribution to performance (Minor to Major) (Premkumar and King, 1991) IS Function performance (Poor to Improved) (Cohen, 2002)
Alignment (Sub-category of SISP Outcomes)	Business – IT lag (Small to Large) (Ang <i>et al.</i> , 1995) Business/IS plan consistency (poor to excellent) (Reich and Benbasat, 1996) Business/IS understanding (Divergent to Mutual) (Reich and Benbasat, 2000) Business/IS commitment (Divergent to Mutual) (Reich and Benbasat, 2000) Business/IS climate (Suspicion to Trust) Business/IS conflict (Unmanageable to Healthy) Business/IS views (Divergent to Shared) Business participation in SISP (Kearns & Lederer, 1997) IS participation in business planning (Kearns & Lederer, 1997)
IS Plans (Sub-category of SISP Outcomes)	Comprehensiveness (Shallow to Extensive) (Lederer and Sethi, 1996) Currency (Obsolete to Up to date) Flexibility (Rigid to Changeable) Perspective (IT to Top Management) (Hann and Weber, 1996) Usefulness (Worthless to Valuable) (Lederer & Sethi, 1992)
Management & Mindset about IS/SISP (Le Roux, 2001)	Commitment (Weak to Strong) (Galliers <i>et al.</i> , 1994) Attitude (Negative to Positive) Availability (Never to Always) Expectations (Unrealistic to Fair) (Lederer & Sethi, 1998) Foresight (None to Clear) (Flynn & Goleniewska, 1993) Involvement (Minimal to Excessive) (Cerpa & Verna, 1998) Support (Conceptual to Real) (Galliers <i>et al.</i> , 1994)

5.1.2 Axial Coding

During axial coding, the categories listed in Table 5.2 were more clearly defined in terms of properties and dimensions, and relationships between categories were

established. As noted by Strauss & Corbin (1998), each category may serve as one or more of either a causal condition, intervening condition, action/interaction or consequence. The relationships identified are elucidated below. For each category, the causal relationships emanating from them are listed, followed by the intervening conditions.

i Relationships from Business Planning System

i. (a) Causal conditions

If the business planning system is of poor quality, then the SISP process needs to be more extensive [better quality] to make up for this shortcoming.

The business planning system quality influences the quality of the SISP process, both of these being influenced by the organisational characteristics, and external environment.

The quality of the business planning system affects the level of integration between business planning and the SISP process.

When the business planning system is of poor quality greater top management, and business management involvement [Stakeholder Profile] in SISP may be required to clarify the overall business vision, mission and objectives.

The business planning system quality affects the level of alignment between business plans and IS plans, as it will be difficult to align IS plans with poor quality or non-existent business plans.

i. (b) Intervening Conditions

Where there is greater top management and business participation in the SISP process, the impact of a poor quality business planning system is mitigated.

A high quality SISP process that is able to overcome the shortcomings of a poor quality business planning system, may still result in alignment on the social level, and possibly on the intellectual level, if business plans are also explicated as part of the SISP process.

The business competence of the IS function, and their ability to formulate strategy, mitigates against the effects of an obsolete or poor quality business planning system on the SISP process quality.

ii Relationships from External Environment

ii. (a) Causal conditions

A highly uncertain external environment makes planning difficult, resulting in a business planning system that becomes obsolete quickly.

An uncertain external environment increases dynamism and turbulence within the organisation.

In an uncertain external environment, a more representative stakeholder profile may be sought for SISP to seek opinions from a wide variety of sources.

An uncertain external environment increases the difficulty of IS plan implementation.

An uncertain external environment leads to non-alignment, through increased divergence of stakeholder views, a lag between business and IT infrastructure, and obsolete business and/or IS plans.

An uncertain external environment may affect expected SISP outcomes, resulting in plans that become obsolete quickly, and are thus not useful.

A highly uncertain external environment will further make a rational SISP process difficult, pushing organisations to a more incremental, adaptive process.

An uncertain external environment, on the other, may lead organisations to favour a more detailed, rational SISP process, resulting in the need for an appropriate balance between rationality and adaptation.

A highly uncertain external environment and high IT activity intensity may influence organisations to seek to gain competitive advantage from IT, which may result in a SISP process, better integrated with business planning.

Where there is high IT Activity Intensity in the external environment, the IS function is likely to play a more strategic role, and thus the SISP process is likely to be of better quality.

ii. (b) Intervening Conditions

Where an organisation is characterised by formality and centralisation, it is more likely to respond to an uncertain external environment with a more rational SISP process.

Where the IS function is mature and competent, an organisation is more able to seek opportunities to use IT to overcome the effects of an uncertain external environment, through a quality SISP process, well integrated with business planning.

A good quality, rational-adaptive SISP process limits the impact of an uncertain external environment on alignment and other outcomes.

iii Relationships from Organisation Characteristics

iii. (a) Causal conditions

An organisation in which a planning culture is embedded is likely to have a more strategic, better quality business planning system

An organisation that is characterised by political turbulence and dynamism is likely to have difficulty maintaining the quality and currency of the business planning system

An organisation with an embedded planning culture is likely to have top management who have a positive attitude towards SISP

The level of formalisation, centralisation and dispersion in the organisation as a whole influences the extent of these characteristics in the IS function

An organisation high in dynamism and political turbulence is likely to encounter deliberate engineering of non-alignment, and IT infrastructure lagging behind business changes

An organisation high in dynamism and political turbulence is likely to experience negative planning outcomes, such as plans becoming obsolete quickly

An organisation in which a planning culture is embedded is likely to have a better quality SISP process, that is more balanced between rationality and adaptation, depending on the external environment uncertainty, and more integrated with business planning

An organisation characterised by formalisation and centralisation would favour a more rational SISP process

A highly turbulent, politically-charged organisation will find it difficult to conduct a rational SISP process, and would be inclined towards a more adaptive process.

A more dispersed, decentralised organisation would tend to have a broader, representative stakeholder profile for SISP, but depending on the management mindset about IS/SISP

An organisation with an embedded planning culture is likely to establish better quality implementation mechanisms

A highly bureaucratic, centralised organisation is likely to be make implementation difficult, slowing down its rate

iii. (b) Intervening conditions

An uncertain external environment limits the ability of a formal, centralised organisation to conduct a preferred rational SISP process

The IS skills of stakeholders determines whether an organisation with an embedded planning culture is able to conduct a good quality SISP process

The consultant engagement influences the degree to which an informal decentralised organisation is able to conduct its preferred incremental, adaptive SISP process

A good quality, rational-adaptive SISP process limits the impact of dynamism in the organisation on alignment and other outcomes.

iv Relationships from IS Function Characteristics

iv. (a) Causal conditions

A centralised, formalised IS function would favour a more rational SISP process

The more mature the IS function, the better the SISP process quality and its integration with business planning

Where the IS function is mature, top management will be more confident in IS, and adopt a positive attitude towards SISP

Where the IS function is mature and strategic, the SISP stakeholder profile is likely to be more representative at a strategic level, and to be more committed and involved

A centralised IS function leads to a stakeholder profile that may not be representative

A more mature and strategic IS function is better able to ensure IS plan implementation proceeds according to schedule, through quality mechanisms that overcome implementation difficulties

A mature, strategic IS function fosters greater alignment between business and IS

A centralised IS function reduces interaction, between business and IS, leading to non-alignment due to a lack of shared domain knowledge

iv. (b) Intervening conditions

A mature IS function facilitates more positive outcomes, from a good quality SISP process, such as fulfilment of SISP objectives, inclusive of alignment

An uncertain external environment may make it difficult for even a mature IS function to conduct a quality SISP process

A highly dynamic, politically turbulent, bureaucratic organisation, with no planning culture, may make it difficult for even a mature IS function to conduct a quality SISP process

A mature, strategic, and forward-looking IS function may look for opportunities to use IT strategically, and thus cause the SISP process to impact the quality of the business planning system positively

v Relationships from SISP Process

v. (a) Causal conditions

An alacritous, adaptive, incremental SISP process reduces difficulties associated with implementation of grand plans

An alacritous, adaptive, incremental SISP process makes it easier to maintain alignment, in the face of an uncertain external environment, and dynamic organisation.

An alacritous, adaptive, incremental SISP process may also lead to non-alignment, caused by inadequate analysis and understanding of the business.

An alacritous, adaptive, incremental SISP process, may lead to negative outcomes, such as plans that are not useful, requiring substantial further analysis before implementation.

A rational, comprehensive SISP process may lead to better-designed, and quality implementation mechanisms

A rational, comprehensive SISP process, results in positive outcomes, such as comprehensive, detailed plans, that may, however, be difficult to implement timeously.

A rational comprehensive SISP process also makes alignment more difficult to achieve due to the lag in adapting comprehensive plans to changing conditions

An SISP process appropriately balanced between rationality and adaptation, depending on the organisational characteristics and environmental uncertainty, and integrated with business planning will lead to greater chances of alignment, due in part to the learning that takes place from participation

An extensive, quality SISP process, integrated with business planning enhances the quality of the business planning system

An overly rational, comprehensive SISP process will lead to excessive top management involvement [stakeholder profile], leading to management adopting a negative mindset about SISP

v. (b) Intervening conditions

Outcomes, such as plans being useful, and thus implemented timeously, are enhanced if the SISP process is comprehensive, and addresses implementation issues.

vi Relationships from SISP Stakeholder Profile

vi. (a) Causal conditions

A representative stakeholder profile allows for a more adaptive SISP process, but better integrated with business planning

A strategically representative stakeholder profile makes for a more top-down rational SISP process

Loose cohesion, and divergence of views amongst stakeholders will lead to a more adaptive, incremental, but possibly lengthy, rather than alacritous SISP process

A narrow stakeholder profile made up of mainly IT personnel, leads to a SISP process of limited quality

A stakeholder profile that leads to excessive top management involvement negatively impacts on the management mindset about SISP

A broad representative, committed stakeholder profile will ease implementation difficulties and lead to better quality implementation mechanisms

A broad, representative, competent stakeholder profile with shared domain knowledge will foster alignment between business and IS

A broad, representative, competent stakeholder profile will lead to positive outcomes, such as broad-based satisfaction, and agreed objectives for SISP

vi. (b) Intervening conditions

The positive impact of a broad, representative stakeholder profile on implementation, is mitigated by a poor quality SISP process with ambiguous goals, lengthy, and not matched with the organisational characteristics

vii Relationships from IS Plan Implementation

vii. (a) Causal conditions

Major Implementation difficulties, minimal plan implementation extent and rate, and unplanned implementation contribute to non-alignment between business and IS strategies

IS plan implementation, to the full extent, and on track leads to positive outcomes, such as improved IS performance, and IS contribution to organisational performance

Successful implementation results in management developing a positive mindset about IS/SISP

Implementation difficulties, and lack of implementation due to insufficient planning may lead to reformulation of plans, through a more extensive, quality SISP process

vii. (b) Intervening conditions

Uncertainty in the external environment and dynamism in the organisation limits the impact of implementation on increased alignment and positive outcomes

viii Relationships from SISP Outcomes

viii. (a) Causal conditions

Valuable outcomes have positive implications for IS plan implementation mechanism quality and increased rate and extent of plan implementation

Valuable outcomes have positive impacts on achieving alignment

Valuable outcomes have positive impacts on IS function maturity and competence

Valuable outcomes may result in the establishment of a planning culture in the organisation, and a SISP process more integrated with business planning

Negative outcomes may result in despondency and a lack of future commitment to SISP amongst stakeholders

Alternatively, negative outcomes may be treated as a learning experience, and lead to a more experienced, skilled stakeholder profile

Positive outcomes result in top management having a positive attitude towards SISP

The previous cycle Process, Implementation, Outcomes and Alignment will be evaluated, as part of a good quality planning process

viii. (b) Intervening conditions

The impact of negative outcomes on the stakeholder profile, may be mitigated by an organisation that has a planning culture, and evaluation within the planning process where failures are treated as learning experiences

The impact of negative outcomes on the stakeholder profile, may be mitigated by top management that has a positive mindset about SISP

ix Relationships from Strategic Alignment

ix. (a) Causal conditions

A poor state of alignment, where IT infrastructure lags behind business, affects planning outcomes, such as IS function performance, and IS contribution to organisational performance

A poor state of alignment, where there is lack of IS-Business plan interconnectedness, a climate of suspicion between business and IS, closed communication channels, conflict, and a lack of mutual understanding and commitment to IS/business goals, leads to poor implementation mechanism quality, and implementation difficulties, slow implementation rate and extent, and unplanned implementations.

A poor state of social alignment between business and IS impacts negatively on the stakeholder profile, affecting attitude, commitment and involvement in SISP

Alternatively, a poor state of alignment may lead to a push for a more representative, competent stakeholder profile, with a highly visible project champion, and a commitment to change

Where there is a good state of social alignment between business and IS, the SISP process is made easier, and thus may be more alacritous, and integrated with business planning

The previous cycle Process, Implementation, Outcomes and Alignment will be evaluated, as part of a good quality planning process

ix. (b) Intervening conditions

Where management has a positive attitude towards SISP, and is committed to the process, the negative impact of a poor state of alignment on stakeholder profile is mitigated

Where the IS function is mature and competent, the negative impact of a poor state of alignment on stakeholder profile is mitigated

Where there is a planning culture within the organisation, the negative impact of a poor state of alignment on stakeholder profile is mitigated

x Relationships from Management Mindset about SISP

x. (a) Causal conditions

Where there is a positive management mindset about SISP, the process is facilitated, and will therefore be of better quality, and better integrated with business planning

A positive management mindset about SISP enhances the possibility of a representative, committed and competent stakeholder profile

A positive management mindset about IS/SISP leads to a more strategic role for the IS function

A positive management mindset about SISP leads to better implementation mechanism quality, and fewer difficulties with implementation

A positive management mindset about SISP leads to better alignment, and more positive outcomes

x. (b) Intervening conditions

The impacts of a positive management mindset on process, stakeholder profile, implementation, alignment and outcomes is mitigated by an immature IS function, a lack of commitment, cohesion and skill in the stakeholder profile, or an organisation where there is no planning culture

5.1.3 Selective Coding

In the selective coding phase the central phenomenon was identified, and the categories were then integrated around this.

i Matrix Analysis of Causal Conditions

To begin with the causal relationships identified between categories were summarised in the form of a matrix (Table 5.3 below) in order to identify patterns, and to ascertain the density of relationships between categories. By way of example, the matrix shows that the External Environment (Ext) category impacts/influences the Process (Proc) category through 3 different propositions, and the Outcomes (Out) category through 1

proposition. It also shows that there are no categories that impact/influence the External Environment in the theory (Column 2 of matrix).

Table 5.3: Matrix of Relationships in Conceptual Theory

	Ext	Org	IS	BPS	Proc	Mgt	Stake	Plan	Imp	Align	Out	Total
<i>Ext</i>	-	1	1	1	3		1		1	1	1	10
<i>Org</i>		-	1	2	4	1	1		2	1	1	13
IS			-		3	1	2		1	1		8
BPS				-	3		1			1		5
<i>Proc</i>				1	-	1	1		1	4	2	10
Mgt			1		1	-	1		1	1	1	6
Stake					4	1	-		1	1	1	8
Plan								-				
Imp					1	1			-	1	2	5
Align					2		2		1	-	2	7
Out		1	1		1	1	2		1	1	-	8
Total	0	2	4	4	22	6	11	-	9	12	10	80

The matrix shows a fairly even spread of propositions across the categories. The IS Plan (Plan) sub category was subsumed in the Outcomes category, and so no explicit reference to it was made in the propositions. The Alignment (Align) sub Category was also part of the Outcomes category. It was mentioned so often, however, that it was listed separately from Outcomes. The key characteristic that stands out in the matrix is the number of propositions influencing and emanating from the SISP Process category, making it by definition the core category (Strauss & Corbin, 1998).

Other interesting features include the large number of propositions emanating from the external environment (Ext) and organisational characteristics (Org), and the very few propositions impacting them. This confirms their role as being primarily contextual causal conditions. The IS function characteristics (IS) and business planning system (BPS) categories are also primarily contextual conditions, but are at the same time also impacted by the external and organisational environment, as reflected in the matrix. The Management Mindset (Mgt) and Stakeholder Profile (Stake) categories play a balanced role having an influence on the process,

implementation and outcomes, whilst also being influenced by various factors within the planning system. They are thus the driving force controlling and directing SISP, whilst taking cues from and monitoring the environment. The Implementation (Imp) category is influenced by the environmental context, the planning process, management mindset and stakeholders, as well as by pre-implementation outcomes (e.g., the social dimension of alignment and plan content). It ultimately influences alignment and other outcomes.

The large number of influences on the Alignment and Outcomes categories confirms them as embodying the expected consequences of carrying out SISP. There are a fairly large number of propositions emanating from these as well, mainly due to the fact that there are pre-implementation and post-implementation factors in both these categories. The pre-implementation factors have an influence on categories such as implementation, as well as ultimate alignment and other outcomes. In all a total of 80 different causal propositions were identified between the categories.

ii Analysis of Intervening Conditions

An additional 25 intervening conditions were also identified. These represent the impact of a category on the relationship between other categories, and so cannot easily be shown in the matrix. These intervening conditions are summarised as follows:

Uncertainty in the external environment impacts on the relationships between:

- Organisational characteristics and Process
- IS Function and Process
- Implementation and Alignment.

Organisational characteristics impact on the relationships between:

- External Environment and Process
- IS Function and Process
- Management Mindset and Process, Implementation and Stakeholders

- Alignment (social level) and Stakeholder Profile
- Outcomes (pre-implementation) and Stakeholder Profile

IS Function characteristics impact on the relationships between:

- External Environment and Process
- Business Planning System and Process
- SISP Process and Business Planning System
- SISP Process and Outcomes
- Management Mindset and Process, Implementation and Stakeholders
- Alignment and Stakeholder Profile

The **SISP Process** impacts on the relationship between:

- External Environment and Outcomes
- Business Planning System and Alignment
- Stakeholder Profile and IS Plan Implementation
- Pre-implementation Outcomes (e.g., IS Plans) and IS Plan Implementation
- Organisational Characteristics on Alignment and other Outcomes

This set of set of intervening conditions are interesting in that in effect they show that where direct relationships have been found, the actual SISP process mediates and influences those relationships.

Stakeholder Profile impacts on the relationships between:

- Organisational Characteristics and Process (2 relationships impacted)
- Business Planning System and the SISP Process
- Management Mindset and Process, Implementation and Outcomes

Management Mindset impacts on the relationship between:

- Outcomes and Stakeholder Profile
- Alignment and Stakeholder Profile

It is primarily the contextual categories that are the source of intervening conditions, although the core process category and the drivers of the process (stakeholders and management) by their very nature moderate and influence the strength of relationships between categories. The role of the IS function as the facilitator of the SISP process is recognised by its prominence as an intervening condition.

iii Tabular Analysis of Theory

An alternative way of representing the theory is shown in Table 5.4 below, which this time shows also the number of concepts identified per category (shown in Table 5.2), the number of causal influences on a category (with number of categories impacted in brackets), the number of times it is influenced (with number of categories influencing it in brackets). The number of intervening conditions per category is also shown.

Table 5.4: Tabular Analysis of Conceptual Theory

Category	Concepts	Impacts	Impacted by	Intervening
External Environment	5	10 (8)	0 (0)	3
Organisational Characteristics	8	13 (8)	2 (2)	5
IS Function Characteristics	9	8 (5)	4 (4)	6
Business Planning System	6	5 (3)	4 (3)	0
SISP Process	13	10 (6)	22 (9)	5
IS Plans	(5)	-	-	-
Stakeholder Profile	11	8 (5)	11 (8)	4
Management & Mindset	7	6 (6)	6 (6)	2
IS Plan Implementation	5	5 (4)	9 (8)	0
Alignment	9	7 (4)	12 (9)	0
SISP Outcomes	5	8 (7)	10 (7)	0
TOTAL	83	80	80	25

All categories are fairly dense conceptually with the SISP Process containing the most concepts, followed closely by the Stakeholder Profile. The greatest number of propositions (Impacts column) emanate from the external environment and organisational characteristics categories, as they are primarily contextual. The process category as the core phenomenon also has a large influence. By far, the most impacts

(Impacted by column) are on the core category - SISP Process. In addition the stakeholders, who drive SISP are also influenced by a large range of factors, as indeed they need to be in order to steer the process. The consequences of carrying out SISP are embodied in the Alignment and Outcomes categories, which therefore receive a large number of impacts.

5.1.4 Theoretical Outcome of Analysis

Strauss & Corbin (1998) suggest that a theory may be represented as a well-defined set of propositions or hypotheses, or as a running theoretical discussion. Given the complexity and richness of SISP, it was decided to describe the generated theory by a detailed story line, with key references in support of the major assertions. Following on from this, the theory was illustrated diagrammatically, showing the major categories (see Figure 5.1). Not all relationships could be shown, as this would have defeated the purpose of the diagram, which aimed at giving a high level overview hiding the detail described previously.

i Story line

The story line below is broken up into sections to ease the reading and understanding of it.

i. (a) Context

In an external environment characterized by high uncertainty, and high IT activity intensity, organisations are faced with rapid, often IT-induced changes, and organisational turbulence, as well as increased decentralisation and geographic dispersion, fuelled in no small part by globalisation. A major concern of executives, then, is maintaining alignment between investments in IS, and business goals and strategies (Salmela *et al.*, 2000). SISP is a means of dealing with this uncertainty and lack of alignment, by getting management and other stakeholders to decide and agree on how IT can be used to either support business strategy, or impact business strategy (Salmela & Spil, 2002).

i. (b) Integration with business planning

The **SISP process** should thus be closely integrated with **business planning** (Teo & King, 1997), but in the context of **environmental** uncertainty, the **business planning system** quality may be negatively impacted, becoming obsolete very quickly, and in some cases being non-existent, except in the minds of executives (Fink 1994, Reich & Benbasat 1996).

i. (c) Rational-Adaptation in the process

The **SISP process** will have characteristics of rationality and adaptation, dependent on the planning culture within the **organisation**, and the level of formalisation and centralisation (Ranganathan & Sethi 2002, Segars & Grover 1999). These **organisational** characteristics furthermore may influence the corresponding characteristics within the **IS function**.

The preferred style of **SISP process** that fits with the **organisational** culture may need to be adjusted in the light of **external environment** uncertainty (Sabherwal & King, 1995). Where there is high uncertainty, **organisations** that favour a rational rigid **SISP process** may have to accept some level of adaptation to fit with the **environmental** realities, as an overly rational **process** may take too long to complete, resulting in negative **outcomes**, such as grand plans that are obsolete by the time they are complete, leading to **implementation** of other IS not on the plan (unplanned implementations) (Lederer & Sethi, 1996). Those **organisations** favouring a more adaptive, incremental **SISP process** may have to adopt some level of rationality, as inadequate analysis (lack of detail, poor quality) in the **SISP process** will result in negative **outcomes**, such as plans that are not useful, requiring further planning, before **implementation** can take place (Lederer & Sethi, 1992).

With a good quality **SISP process**, having the right balance between rationality and adaptation, positive **outcomes** should follow, including effectiveness (fulfilled

objectives), major improvements in planning capabilities, an extensive, up-to-date, flexible plan reflective of the top management perspective, broad-based satisfaction amongst stakeholders, and a plan useful for **implementation** (Segars & Grover, 1999). A good quality, comprehensive and alacritous, rational-adaptive **SISP process** that addresses implementation issues results in positive pre-implementation **outcomes**, which in turn set the stage for enabling **implementation** mechanisms, and an implementation process with reduced difficulties, that proceeds according to schedule at the appropriate rate, to the full extent, with a reduced chance of unplanned implementation (Segars & Grover 1999, Lederer & Sethi 1998, Premkumar & King 1994). Notwithstanding, these **outcomes** are negatively impacted by uncertainty in the **external environment**, dynamism and turbulence in the **organisation**, and a poor quality **business planning system** (Sillince & Frost, 1995). A good quality **SISP process** mitigates against these negative impacts.

i. (d) Stakeholder Profile

A representative, competent, highly involved **stakeholder profile**, a mature and strategic **IS function**, and a **management** that has a positive attitude and is strongly committed to implementation, reduces **implementation** difficulties, and enhances the chance of implementation success (Galliers 1993, Galliers & Baker 1995). The **SISP stakeholder profile** should be vertically representative at the strategic level, so that the **SISP process** can be integrated with the current strategic direction executives are pursuing (Galliers, 1993). In dealing with **environmental** uncertainty, **organisation** dispersion, decentralisation and turbulence, the **stakeholder profile** should also be horizontally representative, containing both IS personnel and the diverse business interests. Where there is tight cohesion, clear role definition, a highly visible project champion, SISP skill competence, a good attitude, and sufficient commitment from the diverse interests represented in the **stakeholder profile**, the **SISP process** can be expected to have well-defined goals and be of good quality.

i. (e) Management Involvement

A **process** that is too detailed and lacking in alacrity, i.e., being drawn out, is likely to require excessive top **management** involvement, leading, however, to **management** developing a negative attitude towards SISP, and weakening their commitment level (Galliers *et al.* 1994, Galliers & Baker 1995, Lederer & Sethi 1992, Lederer & Sethi 1996, Salmela *et al.* 2000). Ultimately, where **management** has a positive attitude towards SISP, and is strongly committed to the process, the quality of **SISP process** is better (Premkumar & King, 1994), the **stakeholder profile** is of the required skill competence, and representivity is likely. An improved degree of **alignment** should also result, evident by congruence and consistency between business and IS plans, and on the social level, a climate of trust between business and IS, open communication channels, shared views, and mutual commitment to and understanding of business and IS mission, objectives, and plans (Reich & Benbasat, 2000).

Once again, however, the vagaries of an uncertain **external environment**, and dynamism and turbulence within the **organisation** act in concert to raise **implementation** difficulties, slow the rate of implementation, reduce the chance of full implementation, and necessitate that IS previously unplanned be implemented. They also require that **IS plans** be revised in the light of new conditions (Cerpa & Verna 1998, Fink 1994).

i. (f) IS Function Context

A mature and competent **IS function**, where IS plays a strategic role may help to offset the shortcomings posed by a poor quality, obsolete **business planning system**, as the requisite skill for developing and articulating business strategy as part of the **SISP process** will be available. This will be especially so where the **IS function** participates in the strategic business planning for the organisation (Premkumar & King, 1994). A mature and competent **IS function** is able to influence the achievement of the right balance between rationality and adaptation in the **SISP process** (Sabherwal & King, 1995); however, this may be mitigated by the conditions

of uncertainty in the external environment, and turbulence and dynamism in the organisation.

i. (g) Final Outcomes

After successful implementation, positive outcomes, and alignment previously achieved should be reinforced, with additional outcomes being a flexible IT infrastructure that does not lag too far behind business changes, improved IS function performance, and greater IS contribution to organisation performance (Ang *et al.* 1995, Cohen 2002, Premkumar & King 1991). These positive outcomes are offset by uncertainty in the external environment and organisation, but in the end if the net outcomes are positive, these contribute to developing also a positive management mindset about SISP, a better quality business planning system, and improved skills and competence amongst the stakeholder profile. With a more adaptive, incremental process evaluation and revision occurs on an almost continuous basis, and can be formalised, and made more rational in organisations, by such processes becoming embedded into organisational routines and structures (Galliers & Baker 1995, Lamprecht & Roode 1999).

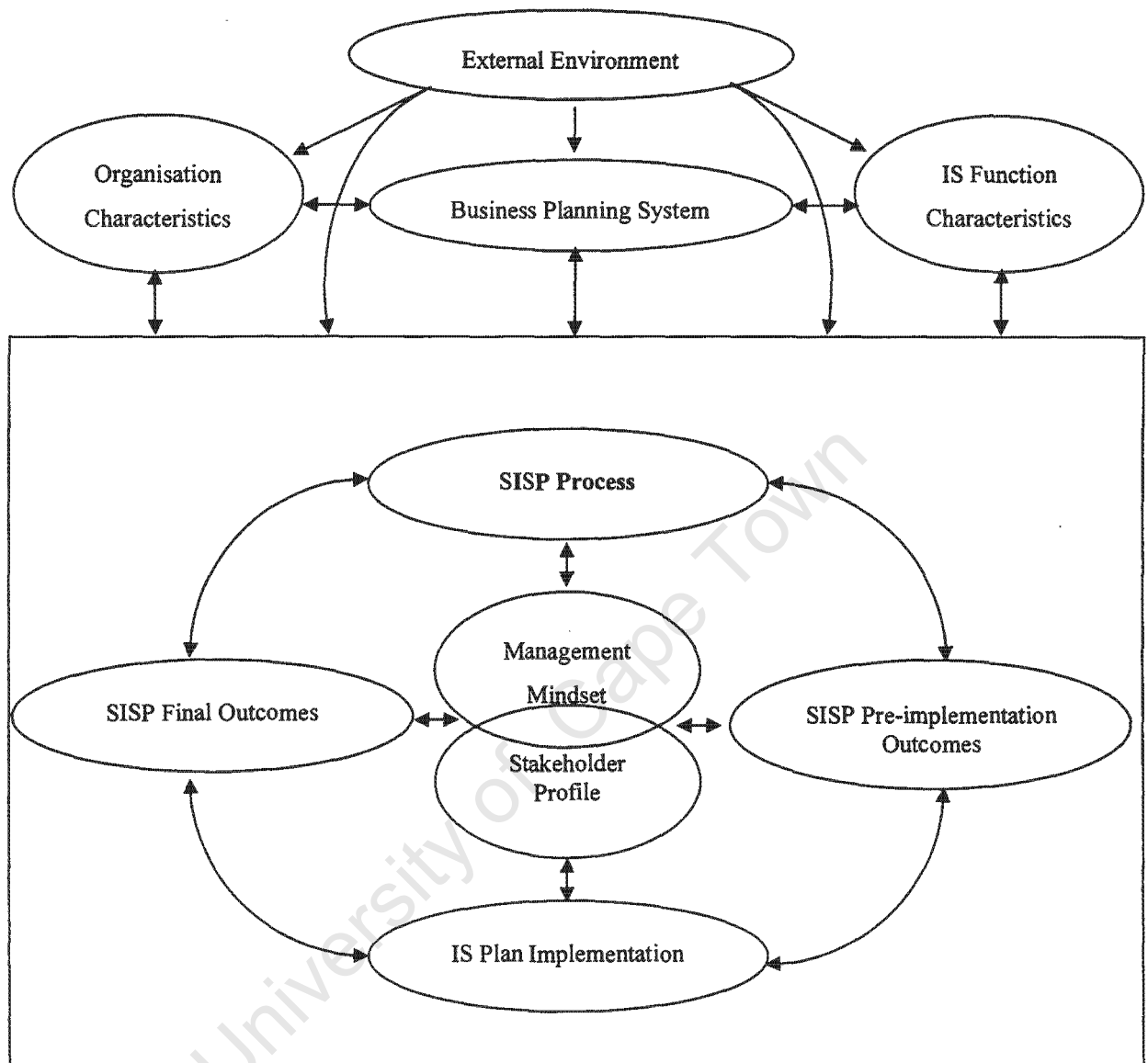


Figure 5.1: Grounded Theory of SISP based on an analysis of SISP literature

The illustration shows in the rectangle the core process category, and how it produces outcomes that subsequently lead to plan implementation, and then final outcomes. These final outcomes are evaluated, with such evaluation serving as input into subsequent planning cycles. This cyclical representation (as in Salmela & Spil, 2002) is more representative of SISP than a linear input-process-output model. The double arrowed lines indicate that the relationships between many categories are two-way. The categories outside the rectangle are primarily contextual, and impact on several of the categories within the rectangle. They are also impacted in some way from within

the rectangle. For example, outcomes of SISP have an ultimate impact on organisation performance and IS function performance.

5.1.5 Discussion and Implications

The theory explicated above integrates the major research findings around SISP as espoused in academic research journals. Its key contribution is in the integrated view it represents. There has been much debate as to whether organisations should pursue a comprehensive rational SISP process, or an incremental process, especially in the context of a turbulent environment (Salmela *et al.*, 2000). The above theory accommodates both approaches, and reveals that essentially each perspective represents a different pattern of the same theory, with variations only in the dimensions of certain properties, such as rationality and adaptation of the process. This view is confirmed by the work of Segars & Grover (1999), who identify profiles of SISP that represent alternative underlying schools of thought. All profiles, however, can be distinguished by examining how they differ in terms of their levels of rationality and adaptation. Interestingly Segars & Grover (1999) find the profile that is high in both rationality and adaptation to be the most successful, which as suggested by the theory above might be the most suitable in the current context of a dynamic, turbulent and uncertain environment.

Those who argue for SISP as an emergent rather than a deliberate process, view strategy formulation and implementation as closely integrated, and refer to it as strategy formation (Baker, 1995). This view can once again be accommodated in the above theory by playing down the role of pre-implementation outcomes such as IS plans, drawing the formulation and implementation activities closer together. In this way the theory is similar to that suggested by Baker (1995). It also bears some resemblance to the Lederer & Salmela (1996) framework and its extensions (See Figure 3.10), but is much richer in the description of relationships, and does not assume that all relationships represent causality (cause and effect). Rather, as pointed out by Strauss & Corbin (1998), in grounded theory analysis the concern is not so much with causality, but with various conditions and how they interact to create events that lead to actions.

Another important difference from the Baker (1995) model is the greater importance assigned to human agents through the inclusion of the following two categories – stakeholder profile, and management mindset about IS/SISP. Baker (1995) refers to these as inputs into the planning process. In the Lederer & Salmela (1996) framework, these are accommodated in the resources category. However, this analysis has revealed that to a great extent the predominant drivers in SISP are the human agents, thus the explicit recognition of the two main categories - stakeholders and management mindset. Other resources such as informational input proceed from the business planning system, which is also represented in this grounded theory as a separate category. Financial resources are determined to a large degree by the management mindset about SISP – once again a discrete category in the grounded theory. Technical resources (e.g., CASE tools) depend mainly on the methodology employed, a concept subsumed in the SISP Process category. The IS Plans are subsumed into the larger Outcomes category which includes the important sub-category of Alignment. The Outcomes are furthermore represented as being pre-Implementation or post-Implementation.

The recognition of the human agents as the predominant drivers of SISP is not surprising, given the qualitative and interpretive nature of the grounded theory approach, but we believe it to be an important distinction from previous work. To accord human agents the subservient roles of inputs or resources to processes having an existence of their own disregards the very fabric of the human nature of all activities related to SISP.

In the next section, the interview data collected from the field is analysed in preparation for developing grounded theories based on planner's espoused views, and reflections of practice respectively.

5.2 Preliminary Analysis of Empirical Interview Data – A Summary

Data was gathered via interview in order to establish an espoused theory of SISP, and a theory in use. By analysing the differences between the two, conclusions could be drawn. One interview per candidate organisation was conducted, where espoused views (data for espoused theory), and reflections on practice (data for theory in use) were both gathered. Although the interviews were structured so as to elicit espoused views first, and then separately reflections on practice, respondents did not always follow this pattern. In many cases, there was a constant comparison being made between the belief of how it should be done (basis for espoused theory), and how it had actually been done in practice (basis for theory in use). Thus, careful analysis was required to ascertain whether statements referred to espoused views or practices. This *modus operandi* is as expected, according to Eden (1989), who notes that “*when managers talk about an issue and what should be done, they use language which is designed to argue why the world is like it is and how it might be changed*” (p. 27). Thus, when asked about beliefs of how SISP should be done, in response the interviewees would often explain current SISP activity, and then juxtapose it with how it should be done, if there is incongruence with their belief system. No attempt was made at trying to artificially separate espoused and in use views by interrupting interviewees as this constant comparison is a perfectly natural cognitive process (Eden, 1989).

The prime purpose of the preliminary phase of analysis was to identify in each interview all espoused views first, and then all reflections on practice next. A secondary aim was to gain greater familiarity with the data, in preparation for the main grounded theory analysis. The data was analysed in terms of key themes that emerged. These themes were either a direct result of a question around them, or in some instances were proffered by the respondent. Not all themes were mentioned in all interviews, but there was generally a core set of themes that recurred, partly as a result of the semi-structured nature of the interviews.

The process and outcome of this activity were very useful and served as a validation of the grounded theories developed later. Trends, in terms of which themes were most consistently mentioned, and the extent of variation of each were identified. Suggestions as to the reasons for variations, and consequences of these themes also emerged from this analysis. The activity was similar to what is defined by Strauss & Corbin (1998) as the writing of memos, and was a useful pre-cursor to coding in grounded theory. Although it appears from the reporting that preliminary analysis was completed prior to the grounded theory analysis of interview data, it must be pointed out that in practice this was not the case. Data gathering, preliminary analysis and grounded theory analysis occurred almost in tandem, and there was a constant iteration and switching between these alternative phases. The detailed analysis and synthesis of each interview is contained in a separately bound Addendum, whilst in this section, a summary and synthesis of the aggregate data is reported. The aggregated espoused view is discussed firstly, followed by the in use views. A comparison of these two perspectives takes place, and then some observations derived from this comparative analysis are noted.

5.2.1 Synthesis and Integration of Espoused Views

i Necessity for SISP

The necessity for SISP was explicitly articulated in 6 of the 7 interviews. The question was answered in two ways. In the first instance reasons for carrying out SISP were proffered. Secondly, objectives for SISP were articulated. These two interpretations and the responses are listed below. In brackets is the source of the statement. For example, C3 refers to interview C3.

Why is SISP necessary?

As stated by a respondent “... *in many ways IT can make or break your organisation because of the **high impact** and **high involvement** of IT in just about every business process, and also the **size of the investment** you need to make in technology in order to enable what the business does...*” (C3). This signifies that IT is being used

strategically in organisations, and that there have been huge investments in it, with a subsequent need therefore to manage these resources strategically, planning being key to this endeavour. Three key reasons, therefore, were:

1. Because of the high impact of IS in many business processes (C3, E5)
2. Because of the high involvement of IS in many business processes (C3, D4)
3. Because of the size of IT investment in the business (C3, G7)

Objectives:

5 main objectives were articulated, these being:

1. To align IT with business strategy (C3, B2, F6, G7, E5)
*A respondent noted: "... it's important to have the strategy and it's equally or more important to make sure that whatever that strategy is, it's completely **aligned** to what the business wants to achieve" (C3).*
2. To identify opportunities to use IT for competitive advantage (B2, G7, E5)
*"... the other thing would be **competitive advantage**. I mean why would you want to spend all of that money, effort, time and so forth. You want to position the organisation" (B2).*
3. To identify opportunities to use IT (strategically) (A1)
4. To manage and control IT budgets and expenditure (D4, G7)
"...where you put money into it (IS)... you should do some planning around it" (G7).
5. To ensure adequate infrastructural capacity (D4, E5)
"...the other thing is your capacity, if you don't have strategic planning, capacity [becomes] a major issue" (D4).

The most frequently cited reason was to align business and IT strategies, which is consistent with the findings from the literature (Lederer & Salmela 1996; Luftman & McLean 2004). There is further congruence with the list of objectives for SISP defined by Earl (1993):

- Aligning investment in IS with business goals [IS strategy]

- Exploiting IT for competitive advantage [IS strategy]
- Directing efficient and effective management of IS resources [Information Management Strategy]
- Developing technology policies and architectures [IT strategy]

Objectives (1) to (3) correspond with the first two listed by Earl (1993). Objective (4) falls under the 3rd objective of Earl (1993) – information management strategy, whilst objective (5) corresponds with the IT strategy objective of Earl (1993).

The competitive advantage objective is interesting, given the reports in literature that many examples of IT use for competitive advantage have emerged incrementally, rather than being planned for (Hackney *et al.*, 2000), and that competitive advantage from IT is the objective least attained from SISP activities (Lederer & Sethi, 1996). However, there is still a belief in some organisations that SISP can be used to identify competitive advantage through IS/IT.

i. (a) Situations not needing SISP

The question concerning situations in which SISP is not necessary was asked in 4 of the 7 interviews. Due to the semi-structured nature of the interviews, not all questions were asked all of the time. Questions asked depended on the flow and direction that the interview was going in, and what was being emphasised. The responses were as follows:

1. *"I don't think there's a situation in which IS planning is not required. For instance, the simplest thing is email, and every organisation is running out of email capacity on a monthly basis...so you need planning for that". (D4)*
2. *"I can only see it being not required for things connected with systems for personal use. But if, say applications, that are part and parcel of the business processes..., it's absolutely critical that it's considered holistically as part of the plan". (B2)*
3. *"In very small organisations, it may not be necessary. But for medium-sized and large organisations, [yes]". (F6)*

4. "... *I can understand the guy at the corner shop who uses his PC to do cash up everyday, that's not strategic to his business...* ". (G7)

The responses point to organisational size as being a factor that may influence the necessity for SISP. Two respondents indicated that in very small organisations this may not be done, consistent with the findings of Conrath *et al.* (1992) and Teo *et al.* (1997), who found that larger organisations are more likely to carry out SISP than small organisations. This may be related to the issue of size of investment. In many small businesses, such as a corner fruit shop, investment in IT may be minimal, so militating against the need for SISP.

The other situation possibly not needing SISP was for personal systems. However, this question was qualified by the need to examine whether indeed a particular personal system is not forming part of a wider organisational process. This analysis of personal systems would in itself be an activity carried out in SISP. Thus, paradoxically the assertion justifies the need for SISP in order to analyse the role and status of personal systems in an organisation. This could lead to the formation of a strategy for end use computing.

ii Characteristics of SISP

ii. (a) Expectation of Business Strategy

A recurring theme was the importance attached to clarity with business strategy in order for SISP to be carried out. In interview C3 it was stated: "... *the business needs to understand where the business needs to be going, and what the key levers and drivers are that that business is going to use to get there [separately from IS]...*". Interviewee B2 mentioned the need for business to be strategic rather than operational so as to develop a strategic IS plan: "... *issues of strategy need to be dealt with completely independently of the planning and budgeting process*". Interviewee D4 pointed out: "*The big issue is what is the strategic view of your company, where is your company going...*". Interviewee G7 stated: "... *it [SISP] should be driven from a*

business perspective...". There was agreement on this point too from interviewee E5 who stated: "IS strategy is dependent on business strategy...". Finally, interviewee F6 succinctly summarised this viewpoint by stating: "You can't do it [SISP] in the absence of those [business] plans, because then you're operating in a vacuum. You've got nothing to guide you..."

Literature tends to support this call for clarity in business strategy, with Premkumar & King (1994) demonstrating that strategic business planning quality (existence) influences SISP quality and effectiveness. Lederer & Sethi (1988) also found that lack of sophistication (strategic focus) in business planning resulted in more severe SISP problems.

ii. (b) Integration with business planning

Related to the previous discussion on business strategy, some level of integration between business planning and SISP was seen as necessary, although there were slightly different views as to the extent of integration required. Five main types of integration are identified from literature (Teo & King 1997, Reich & Benbasat, 2000):

- Administrative (SISP and business planning are separate unrelated processes);
- Sequential (SISP follows and supports business planning);
- IS-led (Business planning follows and supports SISP)
- Reciprocal (SISP and business planning are mutually reinforcing);
- Full (SISP and business planning are fully integrated).

In 5 of the interviews the level of integration espoused was made explicit, whilst in 2 cases it could be inferred from statements made. 2 respondents saw the need for full integration (A1 and B2). Respondent A1 noted: "... *there should be one strategic plan which includes business, IS, HR, Finance, all of them jointly...*". 2 respondents favoured reciprocal integration (C3 and E5). As noted by respondent C3: "*I think that at a very high level, the business needs to understand where the business needs to be going... At the same time your IT organisation has got to understand what IT enablers are available... [at] the next level, you can come to a meaningful discussion...*". 3

respondents advocated sequential integrated (D4, F6, and G7). Respondent D4 noted: “... *your IT plan must fit in with the business strategic plan, because the business must lead the way*”. It was further mentioned that many organisations in the past had followed IT-led strategies, which had resulted in excessive spending on IT, and no corresponding business benefit.

IT involvement in Business Planning

A related issue that was mentioned concerning discussions on integration was IS involvement in business planning. Where full integration was advocated, IS would by necessity be involved in business planning. In the case of reciprocal integration too, it is implied that IS would contribute to business planning, and thus be involved. In the 3 cases where sequential integration was espoused, 2 of the interviewees mentioned the need also for IS to be involved in business planning. As interviewee F6 stated: “... *it is... imperative that at... that departmental strategic planning [level] you have your IS planners so that they can understand where the department is going, and where the organisation is going for them to be able to plan accordingly...*”. Similarly interviewee D4 also believed IS should be involved in business planning to ensure that any business strategies with an IT focus are considered carefully in terms of IT capabilities and potential. Thus, although they subscribe to sequential integration, it is evident that there should be some representation, and thus contribution from IS into business planning. These cases, therefore, in actual fact represent a form of reciprocal integration. This concurs with the finding by Kearns & Lederer (1997) that the benefit of this involvement is greater alignment of IS plans with business plans, and *vice versa*, greater alignment of business plans with IS plans.

ii. (c) Executive Roles in SISP

There was more or less unanimity that the CEO's role was to champion, but not necessarily drive the SISP process (B2, F6). As respondent F6 stated: “*I would say the CEO should champion it, but the CIO should obviously drive it...*”. In one instance (G7) it was mentioned that, given the CEO's overall organisational responsibility, it might not be possible that the incumbent drive the process. The CEO was viewed as

driving the business strategy, and the CIO as the driving the SISP process (E5). In a fully integrated planning process, it would necessarily imply that the CEO should drive the overall process. It was also espoused that the CIO should report to the CEO, and not to the CFO (Chief Financial Officer), as is the case in many businesses (D4).

ii. (d) Stakeholder Involvement in SISP

In 4 of the 7 interviews stakeholder involvement was explicitly stated as necessary and desirable, and in the 3 other cases it was implicitly inferred from the in use practices. The extent and breadth of participation, however, varied. In interview A1, it was noted concerning a planning training session once held: *"... some good ideas came up there... people would sit in, and say I didn't realise you could do that, or I didn't realise you guys were interested in that... [that's what happens] once you start getting that...people talking and discussing various issues"*. Respondent B2 likewise noted: *"You need confirmation, bottom up, but the ideas are coming top down..."*. Interaction and involvement of both stakeholders and management was seen as a necessity in interview G7: As stated, *"... you have a relationship between what the managers want, and what the actual people, the users want... and those things are what you want to get in to your IS plan..."*. It was further noted, *"...management and stakeholders must always see the same thing. The moment there's deviation, and differentiation, that's when... things start to fall apart..."*.

ii. (e) Frequency of Planning and Planning Horizon

Frequency of planning was a recurring theme. In interview A1 it was noted: *"...the other thing I strongly believe is that planning is an ongoing process. It's not something you do at the beginning of the year, and then just have a brief review..."*. This continuity could be achieved, it was inferred, through a research and development unit that continually monitored external trends, and discussed problems with stakeholders. Interviewee C3 saw the need for annual strategy to be revisited and revised regularly (every 6 months), with quarterly review meetings to assess whether strategies and deliverables are still aligned with business objectives. It is inferred from this statement that strategies to be executed, those currently under execution, and

those already implemented are all to be reviewed as recommended by Baker (1995). As furthermore stated: *"... you've got to continuously watch each and every project or initiative that the IT organisation performs, and match it up against that strategy, and if it's not underpinning that strategy, question why you want to even do it..."*.

With interview G7, although no espoused view on planning frequency was made explicit, it was inferred from the in use views that a 6-monthly review was deemed adequate, a more frequent occurrence being seen as not necessary due to the perceived slower rate of change in government as compared to the private sector. Interviewee D4 saw the need for annual planning, although it was recognised that some flexibility was needed to account for unanticipated changes that occur during the planning horizon. Planning beyond a 1-year horizon was not deemed feasible due to the following reasons: *"Change in technology is one, and the other is the tight budgets in the country"*. Interviewee F6 likewise saw the need for an annual planning process, with some flexibility to allow for changes in the business plan during the planning period. As stated: *"There should be a yearly review because of economic and political factors"*. Interviewee E5 also believed in an annual planning review within a 3 to 5 - year planning horizon, as maintaining competitive advantage was seen as a balance between not being too leading edge, and not lagging too far behind. The discussion of planning frequency thus took place in conjunction with the expected planning horizon. Both are affected by the dynamism in the environment, and the need therefore to continually maintain alignment through a flexible planning process.

ii. (f) Comprehensiveness

The comprehensiveness of the process and reviews was seen as particularly important in some instances. In interview A1 comprehensiveness, it was believed, aided in implementation, as a comprehensive process generated solutions to problems, considered contingencies and identified actions to implement, rather than just at a high level identifying problems. Concerning a favoured approach to SISP, it was noted: *"with that one you got down to... quite a detailed level"*. Comprehensive reviews were also seen as important so as to ensure benefits of initiatives are being achieved, rather than just monitoring to ensure implementation. In interview G7, in

contrast a process that is too comprehensive was seen as infeasible for large organisations, as detailed identification of all possible processes resulted in drawn out planning sessions. A favoured alternative was noted as follows: “...*Critical success factors is more of a focus, because you can pick out exactly what you need to focus on...*”.

ii. (g) Implementation focus

Conventional theories of SISP conceptualise SISP as having a plan formulation stage, and then a plan implementation stage (Lederer & Salmela, 1996). In order to improve implementation performance, part of the SISP process should involve planning for implementation (Mentzas 1997, Lederer & Sethi 1998). In interview *A1*, it is espoused that a comprehensive process allows planners to go to a detailed level, and as a consequence to plan adequately for implementation. This is in agreement with Lederer & Sethi (1992) who demonstrated that inadequate SISP results in plans that are lacking in detail, requiring further substantial analysis before implementation.

Interview *C3* highlighted the seamless integration that should exist from formulation to implementation by the following statement: “... *so it's about getting that alignment at the very next step, prioritising those things that underpin that strategy... then executing them...*”. It was noted that some strategies may be broken down into several projects running in sequence or in parallel, but ultimately customer satisfaction with the end solution would determine the success of an initiative. Interviewee *B2* saw the need for a project-planning phase between formulation and implementation, as each strategic initiative could be broken down into several projects. This was confirmed in interview *E5*, although the respondent also pointed out that where the implementation is outsourced there tends to be a definitive line drawn between plan and implementation, but where this is not the case, there tends to be a seamless process from planning to design to implementation. In interview *F6*, it was succinctly noted that “... *a plan in itself is not good enough. The ability to implement that plan is what is required...*”.

ii. (h) SISP Approach

Earl (1993) defined various approaches to SISP, where an approach arose from the attention to and style of method, process and implementation. The approaches that were apparent from the 7 interviews are described next.

In interview *C3* a formalised approach focused on alignment was seen as important. Given the dynamic nature of the business environment, the approach needed also to be flexible. An emphasis on alignment of IT with business rather than the reverse was clear from the following statement: “...*You may put a business case to do it [some IT initiatives], and that might alter the strategy because of the new technology... that could be a driver, but by and large you must not do anything that doesn't directly align with the business strategy...*”. The need for formalisation was inferred from the statement that: “... *there's a way to do things that's accountable, that's measured, that's monitored...*”. A SISP approach that followed business strategy was seen as necessary by interviewees *D4* and *F6* too, with some flexibility to deal with unforeseen circumstances. In both the latter cases the involvement of IT planners in business planning was mentioned as important. Earl (1993) classified the approach advocated by cases *C3*, *D4*, and *F6* as business-led.

Interviewee *B2* emphasised that an approach customized to the organisational culture and context was necessary. In this instance there was a culture of managing by committee and debate, and so SISP was a process of engaging with stakeholders - discussing, negotiating and convincing, in order to obtain buy-in and ultimately approval for the IS strategy. Likewise, in interview *G7* there was an emphasis on matching the SISP process to the context and culture of the organisation. Whilst methods were advocated, they needed to be considered as to their fit with the organisation. Stakeholder participation was also espoused. These characteristics confirm the approach advocated by cases *B2* and *G7* as equivalent to Earl's (1993) organisational approach.

A more rigorous comprehensive process such as the Business Systems Planning (BSP) methodology was favoured by respondent *A1*. The ideal approach also needed

to ensure a means of joint planning to address business problems holistically. Such an approach best matches what Earl (1993) described as method-driven, but leaning towards the organisational approach, given the emphasis on the need for cross functional groups to discuss strategy, and the need to get to a detailed level, for implementation issues to be addressed.

Interviewee *E5* subscribed very much to the architectural view of SISP, and thus the approach espoused was equivalent to Earl's (1993) technological approach.

This analysis has revealed the similarities and differences of the approaches espoused, in comparison with Earl's (1993) taxonomy. More detailed analysis of each case would be required to confirm these assessments.

iii Key Activities

Lederer & Sethi (1996) identified 71 possible prescriptions followed by SISP planners. Given this large number of activities, it was difficult for respondents to give a complete answer to the question as to the key activities they espoused. Interviewees were therefore prompted to specify what they perceive to be the key activities at a very high level. Quite a variety of activities were mentioned, and in order to aggregate them into a coherent whole, the major phases of SISP specified by Mentzas (1997) are used as in Table 5.6. This classification of phases is similar to that of Galliers (1993), and has proven to be a useful framework in prior studies by this researcher (Brown, 2002, 2004). This justified its usage in this study. Additional activities not explicitly declared in response to the question, but that were inferred from other responses were also included. Examples of such were the need for project planning between plan formulation and plan implementation, and review and evaluation of plans and their implementation.

All major phases of SISP as envisaged by Mentzas (1997) were covered by the aggregate list. 2 respondents mentioned ongoing research and development. In the one case (Interview *A1*) it was seen as helping to correctly identify requirements for

specific business units, as opposed to generic applications for the organisation as a whole, due to the interaction that took place at the business unit level. In the other case (Interview C3), it was seen as speeding up the process of SISP, as by constantly analysing the external IT environment, and experimenting with new technologies, a certain readiness could be built up, such that when an opportunity arose to use a new technology the research had already been done, and it was possible to move swiftly to implementation. As stated: “... *one of the things that's got to continuously happen in your IT organisation is R & D, observation and understanding, how things work, what's there, if they're viable, if there's an opportunity, if there's not, there's always got to be that pot of research, so that when a business opportunity needs something... you don't start researching there, you've already got an inkling of what can be done, and it speeds up the decision making...*”. Given the general nature of this activity it was included in all SISP phases.

There seemed to be a lack of focus on implementation when considering the key activities for SISP, although its importance was clear, based on discussions of SISP evaluation, where the success of the end deliverable was very often the measure of SISP success. In addition, the review meetings, which many saw as important, were in part for the purpose of monitoring implementation.

Table 5.5: Key Activities mentioned

SISP Phases	Key Activities Mentioned
Strategic Awareness	Identify Mission/Vision of the organisation (E5) Clarify the strategic view and goals of the company (D4) Determine where the organisation should be going (A1) Clarify and determine the expectations of users (D4) Carry out ongoing research and development (A1, C3)
Organisation analysis	Analyse the current situation (A1, G7); Analyse the business strategy (F6) Diagnose business processes and identify business services (F6, G7, E5) Identify business drivers and challenges (E5) Define what constitutes the core of the organisation's business (B2) Define what constitutes support services (B2) Identify business CSFs (G7) Understand the budgetary mechanisms and procedures in the organisation (D4) Analyse current ICT initiatives, governance, and support structures (F6) Clarify and determine the expectations of users (D4) Do gap analysis between current and desired situation to identify shortcomings (F6, G7) Carry out ongoing research and development (A1, C3)
External environment analysis	Analyse the competitive position of the organisation holistically (A1, G7) Analyse the external IT environment (G7) Carry out ongoing research and development (A1, C3)
Strategy conception	Identify strategic opportunities for IT use (A1) Identify ICT initiatives that can support strategy (F6) Identify information requirements (F6, G7) Do scenario planning, by for example assuming certain constraints are removed (A1) Analyse the risks (A1) Carry out ongoing research and development (A1, C3)
Strategy formulation	Formulate enterprise application portfolio (G7, E5) Formulate enterprise information architecture (G7, E5) Formulate enterprise technology architecture (G7, E5) Prioritise initiatives (C3, F6, G7) Ensure alignment of IT initiatives with business strategy (C3) Allocate budget that is aligned with the core (B2) Review and evaluate (A1, C3, B2, F6, G7) Carry out ongoing research and development (A1, C3)
Strategy implementation planning	Do project planning (C3, B2, F6); Analyse the risks (A1) Execute strategy (C3) Monitor implementation to ensure the initiatives are still underpinning strategy, in the face of change (C3) Carry out ongoing research and development (A1, C3) Review and Evaluate (A1, C3, B2, G7)

iv Evaluation

The various evaluation criteria mentioned are grouped under the following categories:

iv. (a) Overall Planning performance

- Creation of a good quality, useful plan (F6). As stated by the respondent, as a result of SISP “...you’ve got a proper plan, obviously you can always change it if needs be, but at least you’ve got a plan, something that informs your operations”.
- Extent of business-IT alignment achieved (C3). As stated: “... you absolutely need to continually test your strategy... against the business strategy. You’ve got to communicate, communicate, communicate, and always from the corner of your eye, make sure that what you’re doing is still aligned”.

iv. (b) Technology planning performance

- Effective management of technology (E5)
- Development of the technology architecture (C3)
- Integration and management of applications, data and technology architectures (B2)
- Elegance of technical integration of systems and architectures (B2). E.g., it was stated: “Technically, it [SISP] needs to be evaluated in terms of the elegance with which one achieves integration...”

iv. (c) Implementation performance

- Delivery of planned initiatives (C3). As stated, “... the measure of that [alignment] has got to be an accepted deliverable. A deliverable that’s met with a WOW”.
- Meeting requirements of business (B2)

- Budget performance relative to plan (*D4*)

iv. (d) Organisational Impacts

- Customer satisfaction with deliverables (*C3, B2*)
- Realisation of benefits (*C3*)
- Value of initiatives to business (*E5*)
- Impact of implemented systems (*F6, G7*)
- Cost reduction as a result of initiatives (*G7*)
- Increased efficiency as a result of initiatives (*G7*)
- Increased effectiveness as a result of initiatives (*G7*)
- Increased competitiveness as a result of initiatives (*G7*)
- ROI (return on investment) from SISP (*E5*).

Interestingly, SISP success was not only measured with respect to the plan and its alignment with business strategy, but also in terms of the performance of projects implemented from the plan, and the ultimate impact of the end deliverables. This shows the importance of addressing plan implementation as an integral part of SISP.

v Sources of Ideas

Respondents indicated that ideas for SISP were obtained from various sources as follows:

- Textbooks (*e.g.* Ward & Peppard 2002, Spewak & Hill 1992) (*A1, B2*)
- Articles from Internet and professional publications (*C3*)
- Discussions with other professionals (*C3*)
- Consultant Reports (*e.g.*, Gartner and Meta Group, IBM, Zachman Framework) (*D4, G7, E5*)
- Organisational guidelines and procedures (*F6*)

Noticeably absent from this list is the academic research literature. The list is not, however, exhaustive and it was mentioned in one interview that academic research is

sometimes incorporated into consultant reviews. It is also often incorporated into textbooks, and is increasingly available through the Internet.

5.2.2 Synthesis and Integration of Reflections on Practice (In Use Views)

i Necessity for SISP

The necessity for SISP in practice was not directly asked in all interviews, but was inferred from examining responses on views of planning practice. The main points that emerged were that SISP was used to:

1. Develop plans for IS that support corporate goals (A1, G7, E5). As noted in interview A1: *"...the [CEO] and co. would define the business plan, and then expect the IT plan to support that plan"*.
2. Try and develop sustainable competitive advantage through IT (E5). As stated: *"That's why our company is in business. We have a competitive advantage because of our use of IT"*.
3. Understand business needs through consultation, negotiation and discussion (B2). As stated by respondent B2, *"... first I had a reference book, with people from different parts of the... community. They were my first port of call. Then I went and saw [other] individuals and communities... so I didn't bring everyone into a group. Some people needed to have the kind of chat we're having"*.
4. Satisfy organisational policy requirements (F6). It was noted by a respondent that *"You actually have to do a strategic plan before you get your budget allocation..."*.
5. Gain support and buy-in for IS plan, and hence funding (B2, F6). Respondent B2 noted: *"...I have to convince very [different] communities that disagree with each other in all kinds of ways..."*.
6. Control expenditure on IS, and manage the budget (C3, D4). As respondent D4 stated: *"The main reason will be to manage the budget"*.

7. Develop plans useful for operational and project planning (F6, G7). G7 noted that: "...you've got a *proper plan... something that informs your operations*".

The sense of SISP gained from this analysis is that it stands between business strategy and implementation of specific IT initiatives, mediating, and providing a link between the two. Objectives 5 and 6 represent variations along a continuum, where at one end of the spectrum plans are created as a means of securing funding, and at the other end, a budget is provided, and plans must then be created to gain maximum benefit from this amount. Objective 4 reflects an attempt at developing a culture of planning in organisations through policies, with the danger, then, that SISP is carried out with the underlying motive of satisfying organisational requirements rather than for the purposes of managing IT strategically. Objective 7 shows that implementation issues are an important aspect to be addressed in SISP in order for plans to be useful. Interviewee B2 warns, however, that combining operational issues with questions of strategy leads to the danger of agents not thinking strategically.

ii Characteristics of SISP

ii. (a) Business Strategy

Lack of involvement in business strategy from stakeholders was a major limitation according to Interviewee A1. As stated, "... *the top guys would sit there and say, right our business plan for next year [is] ...*" This resulted in missed opportunities for using IT strategically. In Interview C3 the tendency to focus on operational and budgetary issues made it difficult to align IT with business strategies. As stated: "...*what you are trying to infuse in an operational discussion is strategic issues, and what happens there is the big danger you cease thinking strategically. You end up thinking operationally...*" Interviewee D4 noted that business strategy was not always available or clear to IT, and thus organisations tended to follow what they perceived to be the business strategy, which did not always match the real strategy.

ii. (b) Integration with business planning

The state of integration in each interview was typically sequential (A1, C3, F6, G7). As stated by an interviewee "... *business precedes systems precedes technology...*". Interviewee D4 had encountered many organisations with IT-led strategies. He stated : "... *the business is following IT, and I think it is wrong. ...Because IT has got a perception of where the business is going to. But they mustn't have a perception, they must know where the business is going to*". In interview B2, it was pointed out that traditionally there were separate processes, with a lack of any level of integration, but that the organisation was now moving towards full integration. In interview E5, it was noted that the link between business and IS/IT architecture was not always clear.

IT involvement in Business Planning

Interviewee A1 noted that in practice top executives would develop the business strategy, and then expect all other departments to meet the goals and targets they set. Interviewee D4 mentioned that in some organisations IT participated in business strategy meetings, but in others this did not happen. In the latter cases, this sometimes resulted in the development of strategies that were not feasible from an IT perspective, since IT were not consulted in the first place in order to assess feasibility or identify opportunities to use IT strategically. Thus, it was posited: "*That's why IT must be there to say, listen guys, for that [business initiative] we need something extra...*".

ii. (c) Executive Roles in SISP

In interview C3, it was mentioned: "...*there was a time in our history when the old method worked... and ... your Financial Director would in essence fairly much dictate how things were going to work... Now, there're a lot more people involved there're a lot more stakeholders, there's a lot more processes, a lot more different systems, a lot more in the company of different businesses ...*". This is indicative that organisational growth and IT munificence lead to a more strategic role for CIOs.

The reporting relationships of the CIO to CEO were diverse, with two cases where the CIO reported to a CEO (*A1, E5*), and two where the CIOs were reported as having board representation (*C3, D4*). In case *B2*, the CIO reported to a deputy CEO, whilst in case *F6*, the IS Manager was 3 levels below the Head of Department. In interview *D4* it was mentioned that in many organisations the CIOs reported to CFOs. As a consequence IS did not always gain a high level view of where the organisation was going, resulting in IS strategies not aligned with business strategy.

ii. (d) Stakeholder Involvement in SISP

In one interview it was noted that management and stakeholders were typically involved at the initial stage of SISP. At the next stage, they would then leave IS to plan the detailed level technicalities, before being involved again at the next level down (Interview *A1*). It was also noted that the creation of a post for a research and development officer also provided an opportunity for consultation with stakeholders. As stated; *"... and that person's job was then to look at the company on a continual basis, and to speak to people in the business field and to see what they were doing, and what was frustrating them in terms of IS and business procedures [etc.]..."*. In interview *C3* regional stakeholders contributed to SISP as customers, and were not directly involved in SISP sessions. As stated, *"... the regions are regarded as customers of IT, so that's the forum where they'd input"*. With interview *B2*, wide consultation took place through mechanisms such as committees, informal discussion, and negotiation. This was in line with the organisational culture. In interview *D4*, it was noted that in some organisations, only stakeholders that the CEO recommended could be consulted were involved, whilst in others the CFO dictated and controlled the process, resulting in the finance view being the focus, rather than the organisation as a whole. In case *F6*, various techniques for stakeholder involvement were used, including workshops, interviews and questionnaires. In case *G7*, it was stated that *"...we consult all departments. Obviously there's a lot of work we do beforehand... environmental analysis, [etc.], and then we get our stakeholders in..."*. Similarly in case *E5*, stakeholders were involved through workshops, and participation was used as a means to achieve buy-in for implementation. As stated, *"Without buy-in they won't pay for it [IT systems] and its implementation will be a problem"*

ii. (e) Frequency of Planning and Planning Horizon

For each interview, the following described the in use views:

A1 – *“There was one big annual one [planning session] and then quarterly it [the plan] was refined”*. However, it was also noted: *“... our quarterly meetings were pretty brief, OK, and when I say pretty brief, I mean like half an hour, and it was just basically to say, you had those 4 points have you covered them, and where are you with them...”*. As a result, *“it was very difficult to get new issues on to that agenda”*

The result was a rigid process, incompatible with a changing environment.

C3 – No formal reviews took place. It was mentioned: *“when the organisation was a lot smaller it actually was happening, but it wasn’t happening formally. Now that the organisation is alot bigger, and there’s no formal process, the kind of one on one type of approach or quick discussion approach doesn’t work”*.

B2 – A 3-year planning horizon was used, but it was noted *“... one of the cast iron reasons and conditions I gave to all the parties is basically to say to them - at the time that we are ready to purchase, in other words we now actually have got the money, the time that we are ready to purchase we must revisit all our [technology] decisions”*. This was due to the environmental dynamism, which impacted on technology choices.

D4 – An annual planning horizon was used, due to IT dynamism and tighter restrictions on IT spending. Concerning reviews, it was noted: *“... we’ve got a monthly [review], but remember now, the plan is never on the table again, the budget is on the table... Sometimes you never see that plan again. It’s presented with the budget, and after that you manage the budget”*. Some unplanned projects were implemented, due to unforeseen circumstances.

F6 – A 5/10-year planning horizon was used, at different levels.

G7 – Plans were reviewed every 6 months, which was deemed sufficient given the dynamism in the environment. The planning horizon was 5 years.

E5 – Annual reviews took place within a 3-5 year planning horizon. As stated: *“Every year there is a... review of the strategy. We look at the successes and failures, in order to consolidate successes and investigate failures”*.

ii. (f) Comprehensiveness

In case *A1*, the respondent compared the comprehensiveness of alternative approaches that had been followed by the organisation over time. The initial approach used was deemed comprehensive, as “*with that one you got down to...to quite a detailed level*”, it was stated. An approach was then adopted which focused on broadening horizons to get stakeholders to think more strategically. In this case, the approach was deemed to be too high level, as “*... people would say we've identified there's a problem, but we wouldn't identify solutions, so we merely identified issues and problems...*”. Case *B2* was comprehensive in terms of consultation with stakeholders, whilst in case *D4* alternative scenarios were generated in the SISP process, and through discussion with stakeholders, the preferred scenario was identified. In interview *F6* plans detailed enough to serve as a basis for operational and project planning were generated, as in case *G7* where a comprehensive process that addressed environmental and organisational analysis was carried out resulting in a plan useful to guide implementation.

ii. (g) Implementation focus

The above discussion on comprehensiveness has highlighted the importance of generating plans useful for implementation, and to then monitor and review implementation progress. In case *A1*, when detailed level analysis was done, it allowed for issues of implementation to be addressed, as “*with that one you got down to...to quite a detailed level*”. The brevity of quarterly review sessions, however, meant that there was insufficient analysis of implementation progress, apart from assessing conformance to budget and schedule. As stated by the respondent, “*... our quarterly meetings were pretty brief...*”. In interview *B2* it was noted that each strategic initiative was often broken down into several projects and so further planning for each project was carried out. As stated, “*there's likely to be a one to many relationship between what's in the strategy and what needs to be implemented to achieve the objective*”. In case *D4* tracking of implementation through monthly meetings took place, whilst in case *F6* project plans were sometimes developed that

involved assignment of responsibilities, detailed budgeting and risk assessment. In case *E5* it was noted that “... *there is a clear division between planning, design and implementation. If implementation is outsourced it is clear. If it is internal, then it is bundled with planning and design*”. In case *E5*, as with case *B2*, each strategic initiative was usually broken down into several projects. Unplanned implementations due to scope creep were handled through scope management.

ii. (h) Methodological Approach

In case *A1*, the early approach adopted in the organisation was method-driven. However, it was felt that “... *we were too constrained in our thinking and we weren't thinking widely enough. Because we were getting down into the detail...*”. A changed approach later adopted tended to be too high level, it was suggested, although it tried to encourage a more participative process to strategic planning as a whole, in contrast to a business strategy approach which was heavily top-down, with little input from business units. In cases *C3*, *B2*, and *D4*, no specific methodology was used, but a customised approach was adopted. As stated by respondent *B2*: “*You can't just take a methodology, or a template that is used in the corporate sector... You need to kind of tailor things in relation to this particular environment...*”. There was some dissatisfaction with the approach in case *C3*, as, according to the respondent “... *our methodology and process, I guess, has been pretty ill-defined*”. Furthermore, it was noted concerning planning reviews: “... *when the organisation was a lot smaller it actually was happening, but it wasn't happening formally. Now that the organisation is alot bigger, and there's no formal process, the kind of one on one type of approach or quick discussion approach doesn't work...*”. In case *D4*, SISP was customized to fit the organisational norms and procedures. In case *F6*, guidelines and procedures for the organisation as a whole directed SISP practice. Plans served as a basis for budgetary allocation, and COBIT standards, CSF analysis, value chain analysis and other such techniques were employed. In case *G7* a methodology recommended by a consulting firm was used. As stated by the respondents concerning their approach: “*Your base is the Zachman framework. There's a little bit of IBM, BSP also in there you can pick it up in that methodology. It runs through the cycle. There's a little bit of*

the critical success factor methodology in there also. So it's a combination of things, that's in this process, which is in the process that they follow". ITIL standards were also followed for IT management. Some customisation of the approach took place, and in addition, organisational norms and procedures for planning guided the SISP practice. In case *E5*, the enterprise architecture framework proposed by Gartner and the Meta Group was being used, although it was noted; *"...introducing it is a nightmare. People have always known the old ways"*.

iii SISP Activities

In some cases activities espoused were also those in use, so there was some overlap. Specific tasks mentioned as being used are classified into phases, as with the espoused view analysis, and listed in Table 5.7 below:

Table 5.6: Key Activities in Use

SISP Phases	Key Activities Mentioned
Strategic Awareness	Determine where we want to be (G7)
Organisation analysis	Analyse internal environment (G7) Understand organisational budgetary procedures (D4) Determine where we are with respect to people, process and technology (G7) Define core areas and core functions (B2, D4, G7) Define support services (B2) Identify business drivers (E5) Identify systems to be upgraded or replaced (E5) Carry out R&D as a continuous activity (A1)
External environment analysis	Analyse external environment (G7) Analyse competitive position from and IT perspective, but separate from business strategy (A1) Carry out R&D as a continuous activity (A1, C3)
Strategy conception	Gap analysis and determination of how to get where we want to be (G7) Identify alternative scenarios, and discuss with stakeholders to select the most appropriate (D4). Examine suggestions from regions, ratify and initiate projects if feasible and desirable (C3). Identify IT for competitive advantage (E5). Carry out R&D as a continuous activity (A1, C3)
Strategy formulation	Formulate architectures (E5) Establish service level agreements (D4) Identify technology platform and equipment requirements (D4) Carry out R&D as a continuous activity (A1) Brief review and evaluation (A1)
Strategy implementation planning	Develop project plans for each strategic initiative where there are one or more projects (B2, E5) Assess resource requirements in terms of number of staff and skills required to execute initiatives (E5) Implement projects (B2) Carry out R&D as a continuous activity (A1) Review and evaluate (A1, D4)

iv Evaluation

Evaluation in practice was in terms of two main areas, as classified below:

iv. (a) Implementation performance

In case *A1*, SISP was evaluated primarily in terms of implementation performance, as “... *it was very difficult to get new issues on the table...*”. The evaluations were often done “... *thinly at the top...*” with lack of attention to detail. Again in case *C3*, it was a question of “... *does it work or not? Does what I asked for work? Yes, success, no, not successful. Did I get what I asked for? Yes, success, no, no success...*”. In case *D4* budget performance was the primary criteria, and secondarily, schedule and specification. In cases *F6* and *G7*, SISP was again evaluated in terms of project conformance to budget, schedule and specification.

iv. (b) Organisational impacts

In case *F6* it was noted that: “...*it [measuring IT value] becomes very difficult, I don't think we have mastered that yet...*”. In case *G7*, however, it was stated: “*We know exactly which systems add value, and which don't, we know exactly, from our plan how to actually make sure these systems do add value*”. Thus, assessing the impact of IT is more easily assessed in some organisations than others.

5.2.3 Comparison between Espoused Views and Views on Practice (In Use Views)

The previous two sections have provided a brief overview of key themes identified through preliminary analysis, based on espoused views and in use views respectively. In this section, a high level comparison is made between the two perspectives. It must be emphasised that the purpose of this preliminary analysis and comparison was to separate out espoused and in use views, and to allow for immersion in the data before the main grounded theory analysis was conducted. As such, only high-level comparisons are made here, with detailed comparisons being carried out at the theoretical level, once espoused theory and theory in use have emerged.

i Necessity for SISP

In addition to the espoused goals several other points are brought to the fore from reflection on practice. These include the need to satisfy organisational policy requirements, and the need to address implementation issues, such as getting management buy-in and support, and developing plans useful for operational planning and implementation. These issues are more attuned with daily organisational routines and activities, thus the reason for them being noted in explanations of practice, but not necessarily in the espoused view.

ii Characteristics of SISP

ii. (a) Business Strategy

The espoused view tends to highlight the need and rationale for clarity in business strategy, whilst the in use view highlights the lack of clarity and shortcomings encountered in practice. The two views thus represent opposite ends of the same dimension.

ii. (b) Integration with business planning

The existence of IT-led strategy formulation appears in the in use view, but is not espoused. Interviewee D4 noted that these IT-led strategies had very often resulted in excessive IT expenditure, with no corresponding business benefit. The end result was disillusionment with IT, and a negative management mindset. This could explain the move towards outsourcing and tighter restrictions on IT spending in many organisations. Interviewee C3 mentioned too that implementing leading edge IT initiatives had not always brought the anticipated benefits, thus these were pursued less often. Interviewee E5 noted that his organisation believed in using IT for competitive advantage, but that in order to do so “... *you don't want to be too ahead or too behind...*”. This demonstrates that gaining competitive advantage doesn't always require leading edge IT-led strategies.

IT involvement in Business Planning

The espoused views highlight the need to involve IS in business strategy planning, whilst in use this does not always happen satisfactorily. Once again, the two views represent opposite ends of the same dimension.

ii. (c) Executive Roles in SISP

The espoused view holds that the CEO should drive business strategy, and champion IS strategy. In one instance it was noted the CEO would in fact take control of SISP review sessions, even though the CIO was nominally responsible. Thus, even though there appeared to be congruence, in practice there were dynamics at play, which made the reality different. Involvement of the CEO in SISP is often espoused as beneficial in the literature (Lederer & Sethi, 1992). An unintended consequence, however, is that the CEO may attempt to control the SISP process, and in so doing be at odds with the CIO regarding priorities, and the level of detailed analysis required in review sessions (Hann & Weber, 1996).

It was espoused that the CIO should report directly to the CEO to have a high level view of the organisation. In practice there were a range of reporting relationships, with the CIO at the executive level in some cases, and in other cases at lower levels. The danger of the latter was that IS did not always have a clear understanding of where the business was going, resulting in misaligned strategies. As stated by respondent D4, in such cases: *"... IT has got a perception of where the business is going to. But they mustn't have a perception, they must know where the business is going to. And this is not always true within organisations..."*.

ii. (d) Stakeholder Involvement in SISP

In all 7 cases, there was some degree of involvement, which was congruent with the espoused view. In both views, there was variation in terms of the depth and breadth of involvement.

ii. (e) Frequency of Planning and Planning Horizon

In the espoused view, the planning horizon varied from 1 to 5 years, and was dependent mainly on the dynamism in the environment. In practice, likewise, planning horizons varied from 1 to 5 years, but in addition to environmental dynamism a shorter horizon was also a result of reduced IT expenditure and dissatisfaction with prior strategic IT initiatives. The business planning cycle furthermore impacted on the SISP horizon.

The frequency of planning was espoused as being continuous, quarterly, or every 6 months in order to review implementation and test the alignment. In use, frequency of planning varied from no reviews to monthly reviews. The latter were often very brief, and focused on project implementation rather than strategic change. In one case, the plan was never discussed again, just the review of project progress, and in another, it was very difficult to put new issues on the agenda, thus an inflexible rigid process. This contrasted with the flexible process that was espoused.

The differences here highlight the difficulty of putting into practice what is espoused – i.e., a flexible planning process that continually assesses the state of alignment. There is a tendency, in practice, to see planning as a once off process that creates a plan to guide implementation. Once produced, there is reluctance to want to deviate from the plan and an emphasis especially from strategic management on monitoring budgets and the schedule of projects being implemented. This may then be the reason for the continued importance of alignment. This reluctance may stem from the disruption that is caused by modifying a plan before completion, as it has impacts on the systems currently under development, and possibly may lead to abandonment at worst. A possible mechanism to deal with this reluctance is to emphasise and communicate to stakeholders that nearer to implementation, each project needs to be reassessed, so as to check whether the assumptions upon which it is based still hold (Baker, 1995). Such an approach was advocated by two respondents (B2 and D4).

ii. (f) Comprehensiveness

There tended to be congruence in terms of comprehensiveness between espoused and in use views. The difference arose with regards to reviews, which as espoused should be detailed, but in practice were brief, leading to possible misalignment of implemented initiatives with a changed business environment. The espoused view cautioned also, however, of being too comprehensive, which leads to a process that is excessively lengthy, a point most likely learned from practice.

ii. (g) Implementation focus

The implementation issues mentioned were closely tied with discussions of comprehensiveness, reviews and evaluation in SISP. This is evidence that a clear division between plan formulation and implementation is not a reflection of the reality in many organisations and that in fact, there is a greater level of integration between the two. If implementation is to be outsourced, however, there is a conscious effort to delineate them. In all, the espoused and in use views on implementation focus are congruent. Implementation issues were addressed to a greater extent and breadth in

the in use explanation than the espoused. This seems logical since implementation is closer to the realities of everyday organisational activity.

ii. (h) Methodological Approach

In interviews *B2*, *F6*, and *E5*, there was generally satisfaction with the methodological approach in use, and therefore congruence with espoused views. In case *G7*, there was dissatisfaction with following a process-based approach, and so a service-based approach had been adopted, resulting in congruence between espoused and in use views. In case *D4*, there was a definite strategy to always fit SISP with the business planning cycle and norms, and so this was carried into practice. In case *A1*, there had been a change in methodological approach, with the respondent espousing support for the previous approach employed due to weaknesses in the current processes.

iii SISP Activities

In both analyses all phases of SISP as outlined by Mentzas (1997) were addressed. In use, the strategic awareness phase was not addressed to a great extent, which points to possibly insufficient analysis of business strategy in practice. This concurs with the findings on business strategy elucidated earlier where in practice there was often a lack of clarity, whereas it was espoused that there should be greater clarity. Overall, the greater number of activities espoused compared to the number mentioned in use also reflects the greater propensity to list prescriptions of what should be done, whilst in practice the organisational realities and the manner in which activities are performed are not always linear and prescriptive.

iv Evaluation

The espoused views of evaluation were much more detailed in scope and depth, and included in addition overall planning performance, and technology planning performance. This concurs with the previous finding concerning reviews where in practice these were often brief and lacking in detail. Missing from both espoused and

in use views was the necessity to evaluate not only the outcomes, but also the process of SISP (Galliers, 1991).

v Summary of Comparative Analysis between Espoused and In Use Views

Comparisons took place in two ways. Firstly per interview, and then secondly through a comparison of the aggregate espoused and in use views. In this section, a table summarising the key differences found between espoused and in use views is provided (Table 5.7), followed by some observations and reflections on the nature of interaction between the espoused and in use views. These are based on a holistic consideration of the comparative analyses that were carried out. The chain of evidence is provided in a separately compiled Addendum, with just an overall summary provided in this section, since the preliminary analysis was not central to the research objectives of the study.

Table 5.7: Summary of Espoused Views versus In Use Views

Theme	Espoused View	In Use View
Necessity for SISP	In line with conventional literature	Beyond espoused goals (concurs with Heng & Newman, 2001)
Business Strategy	Highlights the need for clarity	Often, a lack of clarity
Integration with Bus. Plg.	IT-led strategy not mentioned	Cautions against IT-led strategy
Executive Roles	CIO should drive IS strategy	CEO, in some cases, controls IS strategy
Stakeholder Involvement	Needed	Involvement is sought
Frequency of Planning	Regular reviews advocated	Some reluctance to revisit plans
Comprehensiveness	Detailed planning and reviews advocated.	Reviews sometimes not detailed enough
Plan Implementation Focus	Less prominent	Greater mention made of this.
Methodological Approach	Variety of approaches advocated	Variety of approaches used
SISP Activities	More detailed	Limited attention to strategic awareness activities.
Evaluation	More detailed in scope and depth	Often brief and lacking in detail

v. (a) Observations on Derivation of Views and Opinion

- The espoused view often provides the rationale for what is put into practice (*E5*).
- Espoused views may emanate from failures and shortcomings experienced in practice (in use views) (*A1, C3, B2, D4, G7, Aggregate comparison*).
- Although in use and espoused views may be congruent initially, unintended consequences in practice may result in the in use views changing, necessitating a rethink of the espoused view (*Aggregate comparison*).
- Where espoused views are derived from failings in practice, there is a tendency to espouse a view at the extreme opposite end of the failed practice (*C3*). Implementation of such radical change needs to be viewed with caution, however, due to its possible incompatibility with organisational culture.
- Espoused views may be informed by changes in the external environment, which necessitate a rethink of current practice (*C3*).
- Espoused views may emerge from innovative practices, which may have been arrived at unintentionally or through experimentation (*e.g. training*) (*A1, F6*).
- When well-researched and well-thought out change initiatives inform the espoused view, there is greater likelihood of it being institutionalised in practice (*C3*).

v. (b) Observations on Congruence between Espoused Views and Views on Practice

- An appreciation and understanding of an organisation's culture, norms and procedures lead to greater congruence between espoused and in use views, as over time, espoused views will be developed that when implemented will be accepted in use, resulting in congruence (*B2*).
- Espoused and in use views may be congruent, but the motive for each may differ (*D4, Aggregate comparison*).
- Congruence between espoused and in use views may be as a result of the inability to notice weaknesses in current practice (*C3*).

- Where espoused views have been successfully implemented in practice, this reinforces the belief in the espoused view (F6). There is a danger that this view is so strongly held on to that it will be difficult to change when circumstances require.
- In certain instances there may be congruence between espoused and in use views due to the views espoused by researchers and consultants gradually gaining acceptance and being implemented. (Aggregate comparison).
- Espoused views may be congruent with in use views in order to fit with the organisational culture rather than due to any personal or professional conviction of the planner (Aggregate comparison).

v. (c) Observations on the Gap between Espoused Views and Views on Practice

- Espoused views and in use views often represent opposite ends of a spectrum (Aggregate comparison).
- A gap between espoused and in use views leads to actions to be taken to reduce the gap. So espoused views inform in use views (A1).
- The widely reported and perceived failure of certain practices results in their widespread rejection, and thus absence from espoused views (Aggregate comparison).
- Differences in views concerning the rationale for SISP represent possible differences in views between the CIO (espoused), and CEO (in use) depending on the degree of control the CEO has (A1). This concurs with the findings of Hann & Weber (1996), who found that where the CEO controls SISP, the CEO's goals are reflected in the plan, whereas if the CIO is in control, the CIO goals are reflected in the plan.
- Where practices in use are difficult to change, due to resistance (*e.g.*, fixed management mindset about IT) then informal mechanisms may be employed to bring the espoused views into use (A1).
- Resistance to change slows down the rate at which espoused views can be instituted into practice (C3).

- Where practices in use are rigid and difficult to change, differing espoused views may not be implementable resulting in an irreconcilable gap between the espoused and in use views (*D4*).
- Certain espoused views may be difficult to put into practice. The question of “more easily said than done” holds true. For example, the closeness of the implementation to practice makes it difficult for organisations to step back, and review again the plans, which form the basis for implementation. Thus, in use, there was a reluctance to review plans in detail as espoused (Aggregate comparison).
- Espoused views may not easily reflect reality, due to the complexity of real world practice (Aggregate comparison).
- Prescriptions are easier espoused, as in practice activities are not often performed in a linear step-by-step fashion (Aggregate comparison).

v. (d) Observations on Conceptual Distance

- Views reflected in use may not be espoused due to the greater conceptual distance of the espoused view from practice, and the closer the in use view to the daily lived experiences (Aggregate comparison).
- In use views may be richer in description than espoused due to the conceptual distance of espoused views from practice (Aggregate comparison).

v. (e) General Observations

- In use practices may be observable to an outsider, but may not be explicitly stated by a respondent (*C3*). This corresponds with the findings of Argyris & Schon (1974) who note that theory in use is sometimes tacit.

- The iterative learning cycle between espoused and in use views needs to be continually in motion for continuous improvement to take place (A1, C3).

v. (f) Summary of Comparisons

The comparisons using the two different methods (per interview versus aggregate data) yielded some overlap, but also revealed some unique differences between espoused and in use views. The differences are based upon the analysis of key themes that emerged through interviews, and serve as a useful background for more detailed analysis using grounded theory, where rather than perspectives being compared, the underlying theory that informs those perspectives will be compared. Any differences between the theories will be more profound.

5.3 Using Grounded Theory to Develop Espoused Theory

To generate the espoused theory from the 7 interview transcripts, the three major coding steps of grounded theory were employed – open coding, axial coding, and selective coding, respectively. Although the phases were performed iteratively, interspersed with data gathering and preliminary analysis, the final outcomes from each phase eventually became apparent and are described below.

5.3.1 Open Coding

72 different concepts were identified. These were grouped into 11 major categories. The names of these categories were almost identical to those found in the conceptual theory derived from literature. This similarity allowed for easy comparison of theories. The categories and the number of concepts in each are as follows – External Environment (5); Organisation Context (5); IS Function Context (8); Business Planning System (4); SISP Process (21); IS Plans & Strategies (4); IS Plan Implementation (5); Management & Mindset (2); Stakeholder Profile (9); Alignment (4) and Evaluation & Outcomes (5). Overall the SISP process was the most densely described category, followed by Stakeholder Profile, then IS Function Context.

Table 5.8 shows the categories and their concepts, as well as dimensions. The sources of concepts are also displayed. So, for instance, 4.13 in the source column refers to Interview #4 transcript, paragraph 13. The detailed interview transcripts are contained in a separate Appendix in order to preserve anonymity of respondents.

Table 5.8 Categories and Concepts within Espoused Theory

Category	Concept	Dimensions		Sources					
Alignment	IS-Business Fit	Misfit	Good Fit	4.13	6.21				
	IS-Business Understanding	Divergent	Mutual	6.7					
	Strategic Alignment	Poor	Well-aligned	2.1	3.1	3.2	5.1	7.1	
	Structural Alignment	Poor	Good	2.1					
Business Planning System	BP-ISP Integration	None	Full	1.2	2.2	4.4	7.1		
	Business planning level	Operational	Strategic	3.4					
	Business strategy clarity	Ambiguous	Clear	3.2	3.10	4.2	4.5	5.3	
	IT involvement in business planning	None	Adequate	1.15	4.7	5.4			
External Environment	Environmental dynamism	Slow	Rapid	1.15	2.4				
	Environmental hostility	Subdued	Competitive	6.18					
	Environmental trends	No effect	Big impact	7.2					
	IT Dynamism	Static	Rapid	4.1					
	IT Munificence	No variety	Wide variety	3.11					
IS Plan Implementation	Implementation activity	Limited	Broad	2.3					
	Implementation difficulties	Minor	Major	5.12					
	Implementation monitoring	None	Continuous	2.3					
	Implementation need	Not realised	Recognised	5.12					
	Implementation timing	Sequential	Parallel	2.8					
IS Function	CIO level	Operational	Strategic	4.6					
	IT Management Standards	Proprietary	Customised	2.3	3.12				
	IS Function Standards	Diverse	Singular	1.10					
	IS Function Support	Reactive	Proactive	3.15					
	IT appropriateness	Environmentally incompatible	Environmentally compatible	6.35					
	IT investment	Small	Large	2.1	6.16				
	Research & Development Unit	Non-existent	Formal	1.5	2.3				
IS Plans & Strategies	Role of IS	Support	Strategic	2.1	7.1				
	IS Plan comprehensiveness	Shallow	Detailed	1.20	6.4				
	IS Plan Scope	Small	Large	7.4					
	IS Plan Usefulness	No use	Beneficial	5.11					
	IS Renewal Strategy	Laggard	Leader	2.7	7.4	7.5			
Management & Mindset	Management Focus	Operational	Strategic	3.10					
	Management IT appreciation	Weak	Strong	1.20					
Organisational Context	IT Budgetary allocation	Pre-planning	Post-planning	4.3					
	Organisation Norms	Diversity across functions	Standard across functions	1.11	6.30				
	Organisation Size	Small	Large	1.9	5.10	6.32			
	Organ. Culture	Overlook	Consider	3.5	5.6				
	Organ. Dynamism	Stable	Turbulent	1.9	5.7	5.12			

Table 5.8 (ctd.)

Category	Concept	Dimensions		Sources					
Outcomes	Competitive Advantage through IT	Short-term	Sustainable	3.1	6.17	6.18	6.2		
	Consequence of non-alignment	Minimal	Costly	2.5					
	Evaluation criteria	Informal	Formal	2.7	3.11	4.10	7.8		
	IS Impact	Low impact	High Value	2.7	6.23				
	SISP Benefits	None	Many	7.7					
Process	BP-ISP Integration	None	Full	2.2/7	3.3	4.4	5.1	6.14	7.2/11
	SISP Activity set	Narrow	Broad	1.3	1.5	4.1	4.9	5.5	7.3
	SISP Adaptation	Rigid	Flexible	2.4	2.4				
	SISP Alacrity	Drawn out	Rapid pace	2.3	6.8				
	SISP Approach	Social	Technical	6.36	6.37				
	SISP Change Management	Overlooked	Considered	6.5					
	SISP Comprehensiveness	Shallow	Detailed	1.19	1.20	3.10	6.27		
	SISP Feedback	Weak	Strong	1.20	6.23				
	SISP Flexibility	Rigid	Flexible	1.15					
	SISP Flow	Top down	Bottom up	1.15	3.8				
	SISP Focus	Financial Control	Creativity	4.1					
	SISP Formalisation	Informal	Formal	2.3					
	SISP Frequency	Once-off	Continuous	1.15	2.3	3.3	5.7	7.4	
	SISP Horizon	Short-term	Long	4.8	5.8	7.4			
	SISP Levels	Singular	Multiple	2.2					
	SISP Methodology use	Proprietary	Customised	1.19	3.12	6.25			
	SISP Opportunity identification	None	Facilitated	1.2					
	SISP Prioritisation	Overlooked	Considered	2.3	3.2	4.12	6.4		
	SISP Research & Development	None	Integrated	1.5					
	SISP Review	Superficial	Comprehensive	1.15	1.26	2.3			
	Technique appropriateness	Inappropriate	Appropriate	6.8	6.33	6.39			
Stakeholder Profile	Participation Rationale	Not considered	Considered	6.37	7.12				
	Planner Training	Separate from planning processes	Integrated with planning processes	1.15					
	Sense of ownership	Weak	Strong	2.11					
	SISP Control	CIO control	CEO control	3.8	5.9	7.6			
	Stakeholder agreement	Lacking	Strong	3.8	6.3	6.5			
	Stakeholder communication	Minimal	Continual	2.7	3.19				
	Stakeholder Competence	Lacking	Highly competent	6.27	6.37				
	Stakeholder communication	One-way	Interact	3.11	5.6				
	Stakeholder Involvement	From beginning	Later on	5.9	6.37				

5.3.2 Axial Coding

In axial coding the categories were refined and their properties and dimensions more clearly defined. Relationships between them were then identified, but at the level of properties and dimensions of the categories. The number in square brackets after each proposition reflects its source. So, for example, 4.4 refers to interview transcript #4, paragraph 4.

i **Espoused – Business Planning System**

Given that IS strategy is dependent on business strategy a clear business strategy should precede and inform the SISP process [4.4, 5.3, 7.1].

Business planning should be linked to the SISP process [1.2, 2.2].

IT involvement in business planning leads to clearer IS [function] understanding of business strategy [5.4].

IT involvement in business planning leads to clearer business [stakeholder] understanding of IT potential and limitations [4.7].

IT involvement in business planning leads to a SISP process that can better identify opportunities to use IT strategically [1.15].

ii **Espoused – External Environment**

Due to the dynamic external environment the SISP process should be made flexible enough to adapt to changes [1.15, 2.4, 7.4].

Due to the dynamic external environment, SISP horizons should be made shorter [4.8, 5.8].

A highly dynamic IT environment results in only short-term competitive advantage being attainable through IT [6.18].

IT environmental dynamism makes detailed SISP difficult [4.1].

The growing pervasiveness of IT in business [environmental trend] requires greater levels of BP-ISP integration. [7.2].

iii **Espoused – Organisational Context**

Changes in the organisational context may impact negatively on IS plan implementation. [5.12].

Where there are changes in the organisational context necessary changes should be made to the IS plans [5.7].

The organisational approach to IT budgetary allocation (pre- or post- planning) determines whether the primary focus of the SISP process will be on financial control [4.3].

The SISP methodological approach should be customised to suit the particular organisation culture [3.5, 5.6].

Organisation size determines the feasibility of SISP techniques to be used [6.32, 6.33, 6.39].

Organisational norms and procedures should influence the SISP guidelines and procedures used [6.30].

iv **Espoused – IS Function Context**

Where the CIO reports directly to the CEO [IS Function positioning], a high-level of understanding and clarity on business strategy should be gained (for the benefit of SISP) [4.6].

Where large IT investments [IS Function] are made, a SISP process is seen as necessary [2.1, 6.16].

A Research & Development unit in the IS function should help improve the SISP process by speeding up decision-making [2.3].

Where IT plays a strategic role in organisations [IS function context], a SISP process is seen as critical [2.1].

The extent to which formal IT management standards [IS Function] are used determines the extent to which they inform the SISP process [2.3, 3.12].

v Espoused - SISP Process

Carrying out SISP should minimise the chances of developing IS that do not align with business strategy [alignment]. [3.1, 5.1, 6.21].

Assuming that competitive advantage can be planned for, the SISP process is carried out in order to identify initiatives that will give the organisation a competitive advantage through IT [Outcomes] [3.1, 6.20].

Lack of BP-ISP integration leads to non-alignment [3.3, 4.4].

The greater the level of BP-ISP Integration the greater the likelihood of identifying opportunities to use IT strategically [Outcomes] [1.2].

Continually reviewing SISP outputs and outcomes should reduce the chance of non-alignment [3.3].

A comprehensive review of plans, implementation and outcomes derived through SISP should lead to greater alignment of IS with business objectives [1.15, 2.3].

A SISP process that comprehensively examines issues can be used to justify to management the importance of certain IT initiatives, leading to a changed management mindset about IT [1.20].

A more comprehensive SISP process should result in a broader stakeholder profile [3.10].

Prioritisation of IT spending [in the SISP process] should lead to greater alignment of IT investments with the core services. [3.2, 4.12].

Prioritisation of IT initiatives through the SISP process should facilitate implementation [2.3].

Following a well-defined SISP methodology should lead to the production of a comprehensive IS Plan [1.20].

Where the focus of the SISP process is on financial control, evaluation of outcomes should be with respect to planned budget performance [4.10].

vi Espoused – Stakeholder Profile

Engendering a sense of ownership of IT initiatives by stakeholders should positively impact on alignment [2.11].

x Espoused - Alignment

Mutual understanding between business and IS [social alignment] has positive effects [outcomes] [6.7].

IT initiatives aligned to business strategy [alignment] should have positive effects [outcomes] [2.1].

IT Departments aligned to business strategy [alignment] should have positive effects [outcomes] [2.1].

xi Espoused - Outcomes

Outcomes of SISP should lead to organisational performance improvement through IT adding value in the organisation [2.7, 3.1, 6.17, 6.20, 6.23, 7.7].

Outcomes of SISP should lead to IS Function performance improvements [2.7, 3.11, 7.7].

5.3.3 Selective Coding

The matrix below (Table 5.9) summarises the relationships between categories by counting the number of propositions linking each pair. By way of example, the matrix shows that the External Environment (Ext) category impacts/influences the Process (Proc) category through 4 different propositions, and the Outcomes (Out) category through 1 proposition. It also shows that there are no categories that impact/influence the External Environment in the theory.

The matrix illustrates the SISP Process as the core category, with the key outcome from this process being Alignment (Align). The contextual factors influencing the SISP process are primarily the external environment, organisational context (Org), IS function context (IS), business planning system (BPS) and stakeholder profile (Stake). It also shows the Stakeholder Profile as having a broad influence on process (Proc), plan content (Plan), implementation (Imp) and alignment (Align), which is expected

since it is the stakeholders that drive SISP. The role of the management and their mindset is somewhat subdued.

Table 5.9: Matrix Representation of Espoused Theory Relationships

	Ext	Org	IS	BPS	<i>Proc</i>	Mgt	Stake	Plan	Imp	Align	<i>Out</i>	Total
Ext	-				4						1	5
Org		-			4			1	1			6
IS			-	1	4							5
BPS			1	-	3		1					5
<i>Proc</i>					-	1	1	1	1	5	3	12
Mgt					1	-						1
<i>Stake</i>					3		-	2	1	2		8
Plan								-	1		1	2
Imp									-		2	2
Align										-	3	3
Out		1	1								-	2
Total	0	1	2	1	19	1	2	4	4	7	10	51

Table 5.10 represents an alternative representation of the theory in terms of the category densities (number of concepts per category), number of propositions that are emanating from each (with number of categories impacted in brackets), as well as in terms of the number of impacts each category receives (with the number of source categories again in brackets).

The SISP process has the greatest number of concepts and influences, and is impacted by more causal conditions than any other category. It is thus clearly the central phenomena in the espoused theory. SISP outcomes and alignment are impacted by a large number of causal conditions. These are thus as expected the categories representing the consequences of carrying out SISP.

Table 5.10: Tabular Representation of Espoused Theory

Category	Concepts	Impacts	Impacted by
External Environment	5	5 (2)	0 (0)
Organisational Context	5	6 (3)	1 (1)
IS Function	8	5 (2)	2 (2)
Business Planning System	4	5 (3)	1 (1)
SISP Process	21	12 (6)	19 (6)
IS Plans & Strategies	4	2 (2)	4 (3)
Stakeholder Profile	9	8 (4)	2 (2)
Management & Mindset	2	1 (1)	1(1)
IS Plan Implementation	5	2 (2)	4 (4)
Alignment	4	3 (1)	7 (2)
SISP Outcomes	5	2 (2)	10 (5)
TOTAL	72	51	51

Below, a story line is constructed taking into account the analysis done so far.

i Story line - Espoused

SISP is deemed necessary because of the high impact and involvement of IT in many business processes, and because of the large IT investment in organisations [#2].

The objectives of SISP should include:

- Aligning IT with business strategy [3.1, 5.1, 6.21].
- Identifying opportunities to use IT strategically and for competitive advantage [3.1, 6.20].
- Management and control IT budgets and expenditure [#4]
- Ensuring adequate ICT infrastructure [#4]

Given that IS strategy is dependent on business strategy a clear **business strategy** should precede and inform the **SISP process** [4.4, 5.3, 7.1]. Clarity [on the part of IS] can be obtained through IT involvement in **business planning** [5.4], and through the appropriate positioning of CIO relative to CEO. These strategies also benefit business

stakeholders and management as they gain an appreciation of IT potential and limitations from this involvement [4.7]. Altogether these factors ultimately lead to a SISP process that can better identify opportunities to use IT strategically [1.15]. Furthermore, implementation of IS plans and initiatives that are driven by business needs and aligned to business strategy ought to yield positive outcomes for the organisation as a whole [2.1, 2.3].

The growing pervasiveness of IT in business [environmental trend] requires that organisations pursue greater levels of BP-ISP integration. [7.2]. A greater level of BP-ISP Integration has the added benefit of allowing for the identification and exploitation of IT opportunities that match and can impact business strategy [1.2]. Lack of BP-ISP integration on the other hand leads to non-alignment and lost opportunities [1.2, 3.3, 4.4]. Prioritisation of IT spending in terms of business priorities should facilitate implementation [2.3] and should lead to greater alignment of IT investments with core services [3.2, 4.12].

Due to the dynamic external environment the SISP process should be made flexible in order to adapt to changes [1.15, 2.4, 7.4], and shorter SISP horizons should be employed [4.8, 5.8]. An IS Research & Development unit helps improve alacrity of the SISP process by speeding up decision-making [2.3]. This counteracts the difficulty of detailed SISP in such an environment [4.1]. Dynamism *within* the organisation also requires that IS plans be made flexible as any change in organisational direction or strategy may impact negatively on IS plan implementation [5.7, 5.12].

As a result of the dynamism in the IT marketplace, only short-term competitive advantage is attainable through IT [6.18]. An appropriate strategy for IT replacement (neither too out of date nor leading edge) should therefore be considered in order to sustain competitive advantage, and reduce business risk [2.7, 7.4, 7.5]. Where IT plays a strategic role in organisations, a SISP process is critical [2.1], as this helps to maintain alignment between the IS function and business strategy yielding positive benefits for the organisation [2.1].

Organisational norms and procedures influence the SISP procedures used [6.30], and so the organisational approach to IT budgetary allocation (pre- or post- planning) determines the primary focus of the SISP process (financial control or broader focus) [4.3]. The SISP methodological approach too should be customised to suit the particular organisation culture [3.5, 5.6], taking cognisance of organisational size [6.32, 6.33, 6.39]. Where formal IT management standards are employed in the IS Function these inform the SISP process [2.3, 3.12].

Following a well-defined SISP methodology should lead to the production of a comprehensive IS plan [1.20]. A sufficiently detailed IS plan should subsequently facilitate implementation [1.20, 5.11]. A SISP process that comprehensively examines issues can furthermore be used to justify to management the importance of certain IT initiatives, leading to a more informed and positive management mindset [1.20].

Where there is a comprehensive SISP process organisations should seek the involvement of a broad stakeholder profile [3.10]. This is beneficial as stakeholder involvement results in a more relevant SISP process. Usefulness of IS plans is also enhanced [5.9, 6.37] as it is expected that IS plans contain strategies that management and other stakeholders have come to agreement on [3.8, 6.3, 6.5]. Other benefits of stakeholder involvement include generation of buy-in for plans, which eases implementation [3.19, 7.12]. Engendering a sense of ownership of IT initiatives furthermore positively impacts on alignment and other outcomes [2.11], as does constant communication with stakeholders [2.7, 4.13] and a sense of mutual understanding between business and IS [6.7].

Formalised stakeholder training integrated into the planning process should result in an improved SISP process [1.15], due to the interaction and exchange of ideas that occur. Furthermore training improves the level of stakeholder competence, which influences the quality of the SISP process [6.27, 6.37]. A management mindset focused on strategic issues should enhance the ability to think strategically in the SISP Process [3.10]. Monitoring of IS plan implementation to ensure initiatives

align with business strategy is necessary, but may sometimes require a decision to abandon projects [2.3].

Continually reviewing SISP outputs and outcomes should reduce the chance of non-alignment [3.3] as does a comprehensive review of plans, implementation and outcomes derived through SISP [1.15, 2.3]. Where the focus of the SISP process is on financial control, evaluation of outcomes should be with respect to planned budget performance [4.10].

The ultimate outcomes from SISP should be improved IS function performance [2.7, 3.11, 7.7] and organisational performance through the value that IT adds [2.7, 3.1, 6.17, 6.20, 6.23, 7.7].

ii **Commentary**

The key features of the espoused theory story line are:

- Emphasis on a clear business strategy as input into the SISP process;
- An emphasis on integration between business planning and SISP to align strategies and exploit IT opportunities;
- A SISP methodological approach that fits with organisational norms, procedures guidelines and culture;
- The need for a formalised, comprehensive process and plan in SISP to aid in implementation;
- At the same time, the need for flexibility and agility to be built into the process, due to dynamism in the internal and external environments;
- Broad stakeholder involvement and high levels of competence amongst stakeholders;
- Continual review of plans, implementation and outcomes in pursuit of alignment;
- Alignment as the key goal, leading to organisational and IS function performance improvements.

This explanation of SISP mirrors much of the thinking in the contemporary academic literature on SISP, despite the fact that the respondents indicated that they do not in general use academic research as a source of information for carrying out SISP. It thus in effect independently validates academic research findings – albeit from the espoused views of IS planners. It also confirms Glaser's (1992) assertion that with established areas of research no new categories or relationships are likely to emerge, but rather richer explanation of social processes, and a better-integrated theory.

From the perspective of organisational learning, the means-end, goal-seeking behaviour of traditional planning is apparent in the dogged pursuit of alignment. This is evidence of single loop learning. Such learning is governed by four principles: (1) Achieve the intended purpose; (2) Maximise winning and minimize losing; (3) Suppress negative feelings; (4) Emphasise rationality (Moffitt & Peppet, 2004). The need for rationality (formalisation, comprehensiveness, top-down flow, control focus) is tempered by the dual need for adaptation (broad stakeholder profiles, flexibility in planning and plans), however. Thus the theory reflects SISP as finding the balance between these two sometimes-conflicting prerogatives. It can therefore be said to go beyond single loop learning in that respect.

For it to reflect double loop learning, it should hold to 3 principles: (1) Valid information; (2) Free and informed choice; (3) Internal commitment to the choice, and monitoring of implementation (Argyris *et al.* 1985, Moffitt & Peppet 2004). Actions that hold to these principles involve sharing control with competent others rather than trying to unilaterally control events (Argyris *et al.* 1985), balancing advocacy and inquiry to promote collaborative learning (Argyris *et al.* 1985, Senge 1990), and reflecting on values, norms and assumptions that underpin social structures (Greenwood, 1998).

The espoused theory possesses some elements of double loop learning. Valid information is sought through broad stakeholder involvement and consultation, and though this interaction, informed decisions are made. There is close monitoring of implementation, and a questioning of whether implementation should proceed when it becomes evident that an initiated project is no longer aligned with business strategy.

It is recognised that organisational norms and procedures for SISP should be made flexible to adapt to the environmental context, but certain assumptions seem to remain embedded. For example, the need for a clear business strategy as the starting point for SISP and alignment as the end goal. Ciborra & Hanseth (2001) provided evidence that such a model, within the formative context of management as control, leads to drift, whereby the top-down pursuit of alignment, is impeded by environmental change and bottom-up resistance during implementation. Furthermore, in this pursuit more complex IT infrastructure is built which becomes more rigid and inflexible over time, compounding the difficulty of aligning IT to the more fluid and dynamic business strategy (Hackney *et al.*, 2000).

5.4 Using Grounded Theory to Develop Theory in Use

The data referring to reflections on practice (in use views) in the interview transcripts were used as a basis for developing theory in use. The outcomes from the three phases of open coding, axial coding and selective coding are now reported.

5.4.1 Open Coding

91 different concepts were identified in the theory in use. These were grouped into 11 major categories. The categories identified were identical to those in the espoused theory, as the data concerning espoused views and practices were gathered in the same interview. Furthermore, respondents typically compared the two perspectives as the interviews progressed, thus the emergence of the same set of categories. The categories, and the number of concepts identified in each are as follows – External Environment (6); Organisation Context (13); IS Function (12); Business Planning System (5); SISP Process (16); IS Plans & Strategies (5); IS Plan Implementation (8); Management & Mindset (4); Stakeholder Profile (14); Alignment (2) and Outcomes (6). Overall as with the espoused theory, the SISP Process was the most densely described category, followed by Stakeholder Profile, then Organisational Context and IS Function Context.

Table 5.11 shows the categories and their concepts, as well as dimensions. The sources of concepts are also displayed. So, for instance, 3.2 in the source column refers to interview #3 transcript, paragraph 2. The detailed interview transcripts are contained in a separate document in order to preserve anonymity of respondents.

Table 5.11: Categories and Concepts in the Theory in Use

Category	Concept	Dimensions		Sources						
Alignment	IS-Business fit	Misfit	Good fit	3.2	3.3	4.13	4.22	4.23		
	Strategic Alignment	Poor	Excellent	6.1	7.11					
Business Planning System	BP-ISP Integration	None	Full	1.2						
	Business Planning level	Operational	Strategic	1.12	3.4					
	Business Strategy Clarity	Ambiguous	Clear	3.2	4.5	4.19	4.22	6.1		
	IT involvement in Business Planning	None	High	1.2	1.24	4.7				
External Environment	Organisational goals	Profit focus	Shared vision	1.12						
	Environmental Dynamism	Slow	Rapid	1.15	2.4	5.8	6.39			
	Environmental hostility	Benign	Competitive	6.20						
	IT Dynamism	Slow	Rapid	3.7	4.27	6.13				
	IT hype	Damaging	Beneficial	4.21						
	IT munificence	Low	High	2.13						
	IT Skills shortage	Scarce	Available	3.1						
	IS Plan Implementation	Formulation - Implementation integration	Separate	3.16	7.13					
		Implementation difficulty	Minor	5.12						
		IS Implementation failure	Few	5.14						
		Operational Planning	Overlooked	3.16	5.18					
		Plan implementation approach	Ad hoc	7.8						
		Plan Implementation rate	Slow	5.12						
		Strategy to Project Ratio	One	3.18	7.13					
		Unplanned Implementations	Allowed	7.15						
		IS Function	CIO level	2.13	4.6					
		IS Complexity	Low	2.13						
		IS function location	Internal	4.15	7.13					
		IS function services	Inadequate	3.10						
		IS Function standards	Diverse	1.10	6.34					
		IS function Structure	Decentralised	1.0	2.14	6.2				
		IS performance measurement	Ad hoc	4.16						
		IT Management Standards	Proprietary	5.15	6.30					
		IT Management uniqueness	Similar to other functions	6.31						
		Research and Development Unit	None	1.5	1.6					
		Role of IT	Support	1.2	3.2	4.20	7.5			
		IT investments	Small	2.1	4.27					
		IS Plans & Strategies	IS plan comprehensiveness	5.2	5.11					
			IS plan documentation	3.4	3.12					
			IS Plan flexibility	2.4	4.26					
			IS Plan Usefulness	5.2	6.11					
			IT renewal strategy	3.7						

Table 5.11 (Ctd.)

Category	Concept	Dimensions		Sources						
Management & Mindset	CEO-CIO Relationship	Rocky	Harmonious	1.28						
	Management Attitude towards IT	Expense	Investment	4.16						
	Management Support for IT initiatives	Minimal	Positive	1.28						
Organisation Character	Managerial Directives	Little influence	Big influence	6.23						
	IT Budget restrictions	Tight	Loose	4.27						
	IT Budgetary allocation	Pre-planning	After planning	4.20	4.25	5.14	5.14			
	Organisation Culture	Diverse	Homogeneous	1.11	6.7					
	Organisation growth	Slow	Rapid	1.9	2.13					
	Organisation Norms & Procedures	Overlooked	Considered	4.15	4.18	5.14	6.30			
	Organisation size	Small	Large	6.7	6.8					
	Organisation Structure	Decentralised	Centralised	1.0						
	Organisation type	Private	Public	3.7	6.15					
	Organisational Changeability	Resistant	Flexible	1.8						
	Organisational core function	Ambiguous	Clear	4.22	6.18					
	Organisational dynamism	Predictable	Volatile	5.8	6.27					
	Organisational homogeneity	Homogeneous	Heterogeneous	3.5	3.11	3.14				
	Power/political behaviour	None	Pervasive	1.7	1.25					
Outcomes	Evaluation criteria	Informal	Formal	2.16	5.15	6.23	6.28			
	Evaluation efficacy	Difficult	Mastered	5.12						
	Evaluation focus	Budget	Multiple	4.11	5.12					
	Evaluation scope	Outcomes only	Process and Outcomes	6.21	6.24					
	Implementation performance	Budget	Multiple	5.12						
	IT value measurement	Tangible IT value	Intangible IT value	5.13						
Process	BP-ISP Integration	None	Full	1.2	2.7	3.3	3.17	4.5	6.1	
	SISP Activity Set	Narrow	Broad	1.3	3.5	3.10	6.6	6.9		
	SISP adaptability	Rigid	Flexible	1.15	3.7	4.8				
	SISP alacrity	Drawn out	Rapid	3.7						
	SISP Comprehensiveness	Shallow	Detailed	1.18	4.13	6.11	6.12	7.15		
	SISP Feedback cycle	Not Present	In Effect	6.11						
	SISP Focus	Financial control	Creativity	1.7	4.20					
	SISP Formalisation	Informal	Formal	2.10	2.11	5.14	6.30			
	SISP Horizon	Short-term	Long	4.26	6.12					
	SISP level	Operational	Strategic	3.4						
	SISP Methodological Approach	Proprietary	Customised	1.16	2.10	3.12	5.14	6.25/6	6.38	7.9
	SISP Methodology change	Resisted	Accepted	7.11						
	SISP Methodology preference	Irrational	Rational	1.16						
	SISP Review	None	Continuous	3.7	4.26	6.11	6.13	7.14		
	SISP Research & Development	None	Integrated	1.6						
	SISP Review Comprehensiveness	Shallow	Detailed	1.15	1.26	4.26				

Table 5.11 (Ctd.)

Category	Concept	Dimensions		Sources						
Stakeholder Profile	Consultant influence	Minor	Major	1.14	4.14	6.25	7.9			
	IS function skills	Internal	External	1.21						
	Planner Training	No consequence	Impacting on practice	1.15						
	Sense of ownership	None	Strong	2.11						
	SISP Research and Development	None	Existing	1.6						
	Stakeholder communication	One way	Interactive	3.5	4.19	5.9				
	Stakeholder consultation	Narrow	Broad	4.20	6.10					
	Stakeholder Involvement	None	Excessive	2.14	2.15	3.8	4.13	5.6		
	Stakeholder Involvement Technique	Informal	Formal	1.5	3.6	3.12	5.6	7.12		
	Stakeholder Credibility	Low	High	3.8	3.12					
	Stakeholder competence	Lacking	Highly competent	3.12	5.9					
	Stakeholder profile	IT only	Broad	7.11						
	Stakeholder satisfaction	Dissatisfied	Satisfied	1.5						
	Stakeholder support	None	Strong support	3.8	7.12					
	Top Management Involvement	Inadequate	Excessive	1.20						

5.4.2 Axial Coding

In axial coding propositions were identified, and are reported for each category from where they arise. For each proposition, in brackets is the source of the proposition. Thus, 4.5 refers to interviewee #4, paragraph 5.

i In Use – Business Planning System

Lack of a **business strategy** causes IT to take the lead in **strategy formulation** [4.5]

Lack of clarity in **business strategy** leads to non-**alignment** between business and IT [3.2].

Lack of understanding of **business strategy** leads to unintended **outcomes** resulting from SISP [4.19].

Clarity in **business strategy** leads to easier identification of IT initiatives (in the **SISP process**) to support that strategy [3.2].

Business planning and **SISP** are linked processes [1.2].

IT involvement in **business planning** leads to clearer **business [stakeholder] understanding** of IT potential and limitations [4.7].

If business planning is done at an operational level, then SISP tends to focus on operational issues [3.4].

SISP cycle must fit in with the business planning cycle [4.15].

ii In Use – External Environment

Greater environmental (business and IT) dynamism leads to shorter SISP horizons [4.27, 5.8, 6.13].

IT environmental dynamism leads to IS decisions made in the SISP process being reviewed [3.7].

Shorter SISP horizons *mitigate* against the need for more frequent plan revisions [4.8, 4.26].

Increasing IT environmental dynamism makes detailed SISP difficult [3.7, 4.1].

Unsubstantiated IT hype [in the external environment] reduces the credibility of IT, and leads to the development of a negative management mindset about IT [4.21].

Unsubstantiated IT hype [in the external environment] reduces the credibility of IT, as there are negative consequences for organisations that follow the hype [4.21].

Increasing munificence of IT products and services [environmental trend] requires more formalised SISP processes to make sense of them. [2.13].

The IT skills shortage [environmental trend] makes hiring of staff for the IS function difficult [3.1].

iii In Use – Organisational Context

Clarity on the organisation core function leads to SISP emphasis being on support for the core [4.22, 6.18].

A stable organisational environment reduces the chances of IS plan implementation difficulties, whereas power/political behaviours increase difficulties [1.7, 6.27].

Power/political plays in organisations reduce the possibility of real stakeholder involvement in SISP [1.25].

Where there are higher levels of organisational dynamism, SISP horizons are shorter and SISP plans more flexible [4.8, 5.8].

As organisations grow larger, informal and *ad hoc* SISP processes become infeasible [2.13].

Organisation size has an impact on the feasibility of SISP techniques used [6.7, 6.8].

Organisation size influences how often SISP reviews can be held [6.13].

The type of organisation (information intensity) determines the ease with which IT value [SISP outcomes] can be evaluated [5.13].

The type of organisation impacts on the IT renewal strategy [plan], with public sector organisations tending to have longer cycles than those in the private sector [3.7].

The type of organisation dictates whether the focus of SISP is on processes, people and/or technology [6.6].

Lack of organisational homogeneity leads to diverse IS Function standards and systems [1.11].

The greater the organisational heterogeneity, the more diverse the stakeholders leading to wider consultations in SISP [3.5].

A heterogeneous organisational environment requires that multiple objectives for SISP and its evaluation [outcomes] be considered [3.11].

Organisation culture impacts on the style of and methodological approach to SISP [3.5, 3.12, 6.7, 6.15].

Organisation culture, norms and procedures impact on the style of plan documentation [3.4, 5.14].

Organisation norms and procedures determine the timing of SISP studies and the guidelines and procedures to be used for planning, implementation and evaluation [4.15, 4.18, 6.28, 6.30].

Deviation from organisational norms and procedures may impede plan implementation [5.14].

Restrictive IT budgets in organisations lead to less strategic IS planning and shorter SISP horizons [4.27].

Organisational IT budgetary allocation procedures (pre- or post-planning) impact on SISP characteristics such as planning horizon and focus (financial control versus business needs), with post-planning allocation more advantageous than pre-planning allocation [4.20, 4.25, 5.14].

iv In Use - IS Function Context

Where the CIO reports to the CEO [**IS function characteristic**] there is a greater possibility of IT involvement in **business planning** [2.13, 4.6].

Where the CIO reports to the CFO [**IS function characteristic**], the **SISP process** is more likely to be focused on financial control [2.13].

Due to large IT investments [**IS Function**] **SISP** processes tend to focus on financial control [2.1, 4.6].

Where IS plan implementation is outsourced [**IS function characteristic**], the division between plan formulation and implementation [**SISP characteristic**] is more clearly delineated [7.13].

An **IS function** Research & Development unit enables better **integration** of IS initiatives and business requirements [**SISP characteristic**] [1.6].

As the **IS function** grows more complex, informal **SISP processes** become less feasible [2.13].

Where formal IT Management standards [**IS Function**] are employed, they are used to evaluate the **SISP outcomes**. [5.15]

v In Use - SISP Process

SISP is the link between business strategy and specific technology choices to be **implemented** [3.17].

Lack of a proper **SISP** impacts negatively on **outcomes** of implementation [4.11].

Lack of a proper **SISP process** results in IS investments that are not **aligned** with business priorities [3.2].

Lack of a proper **SISP process** increases the chance of **implementation** failure [5.14].

Use of a rigorous **SISP methodology** results in more comprehensive **IS plans**, [1.18, 3.12].

Appropriate application of **SISP methodology** mitigates against excessive top management and **stakeholder involvement** [1.20].

A **SISP methodological approach** that matches with the organisational environment results in positive **Outcomes**, such as alignment [6.38].

Poor **BP-ISP integration** leads to lost opportunities to identify strategic use of IT **[Outcome]** [1.2].

Following leading edge **IT-led strategies** does not always result in positive **Outcomes** [2.7].

The consequence of poor **BP-ISP integration** is identification of IT initiatives that are not **aligned** with business strategy [3.3].

A comprehensive **SISP** process minimises the chance of scope creep during **implementation** [7.15].

Where the **SISP review** is lacking in comprehensiveness, **IS plans** are rigid and remain unchanged [4.26].

A **SISP process** focused on financial control limits the chances of generating innovative ideas of IS use in support of business strategy **[Outcomes]** [1.7, 4.20].

vi In Use - Stakeholder Profile

Stakeholder input informs the selection and implementation [in the **SISP process**] of IT projects [2.14].

Mechanisms for improving **business-IS communications** lead to better identification of **IS needs in SISP** [1.5].

Strong communication with **stakeholders** leads to a better IS understanding of business priorities and IS needs, and therefore better **alignment** of IS with business goals [4.22].

Poor communication with **stakeholders** in SISP leads to negative unintended **outcomes** [4.19].

Stakeholder involvement in SISP helps in negotiating priorities and identifying projects with quick payback, thus easing **implementation** [5.6].

Widespread stakeholder involvement and support leads to approval of IS plans and funding for **implementation** [3.8, 7.12].

Use of informal and formal **stakeholder** involvement techniques improves the chance of support for the **IS plan** and its **implementation** [3.6].

Where credible **stakeholders** are involved in the SISP process, support for the **plan** and its **implementation** is likely [3.8].

Where stakeholders are involved in the SISP process, there is a greater chance of positive outcomes accruing [1.5].

Top management support for IT initiatives is enhanced when credible stakeholders are involved in and support the SISP process [3.12].

Where there is wide stakeholder consultation a more drawn out SISP process ensues [3.7].

Where external consultants are used, adoption of the consultants' SISP methodological approach is likely [1.16, 4.14, 6.25, 7.9].

vii In Use - Management Mindset

A negative management mindset impacts negatively on the social dimension of alignment between business and IT [1.28].

A negative Management mindset about IS narrows stakeholder participation [4.20].

A negative management mindset about IT increases the difficulty of obtaining support for IT implementations [1.28].

viii In Use – IS Plans and Strategies

A one to many relationship exists between what's in the strategy [IS Plan], and the number of projects to be implemented [3.16, 3.18, 7.13].

For each project derived from the strategy [IS plan], further operational planning must be carried out in order to implement it [3.16, 5.2, 5.18, 7.8].

An IS plan can be used to get buy-in for support for implementation of IT initiatives [5.2].

A comprehensive IS plan provides detail necessary to ensure implementation [5.11].

ix In Use - IS Plan Implementation

Evaluation criteria for assessing outcomes are typically defined in project plans [implementation issue][6.23].

x In Use – Alignment

None identified.

xi In Use - Outcomes

Positive outcomes from SISP result in improvements in organisational performance [5.13, 6.23].

Positive outcomes from SISP result in improvements in IS Function performance [6.23].

5.4.3 Selective Coding

The matrix below (Table 5.12) summarises the relationships between categories by counting the number of propositions linking each pair. By way of example, the matrix shows that the External Environment (Ext) category impacts/influences the Process category (Proc) through 4 different propositions, and the Organisational Context (Org) category through 1 proposition. It also shows that there are no categories that impact/influence the External Environment in the theory.

A notable feature of the theory apparent from the matrix is the overriding centrality of the process, which is influenced by more factors than any other category (see the Proc column). It takes pride of place therefore as the core category. Notable also is the IS Plan Implementation (Imp) category which is also influenced by a wide array of factors. This demonstrates that SISP is seen as being concerned with both formulation and implementation of plans, and not just the former. The large number of factors influencing the Outcomes (Out) category confirms it as embodying the key consequences of SISP.

The key contextual category is the organisational context (see the Org row), which has more propositions emanating from it than any other category, primarily influencing the process. The impact of the external environment is somewhat less pronounced in comparison. Also worthy of note is the strong presence of stakeholder

profile (Stake) as a key influence on the planning process (Proc) and IS plan implementation (Imp). This demonstrates that it is the stakeholders who drive and design the planning process through to implementation and beyond. The role of management and their mindset appears somewhat more subdued in comparison.

Table 5.12: Matrix Representation of Theory in Use Relationships

	Ext	Org	IS	BPS	<i>Proc</i>	Mgt	Stake	Plan	<i>Imp</i>	Align	<i>Out</i>	Total
Ext	-	1	1		4	1						7
<i>Org</i>		-	1		12		2	3	2		2	22
IS			-	1	5						1	7
BPS				-	5		1			1	1	8
<i>Proc</i>					-		1	2	3	2	5	13
Mgt						-	1		1	1		3
<i>Stake</i>					4	1	-	2	4	1	2	14
Plan								-	4			4
Imp									-		1	1
Align										-		0
Out		1	1								-	2
Total	0	2	3	1	30	2	5	7	14	5	12	81

In Table 5.13, the categories are compared - this time in terms of their density (number of concepts), number of propositions that are emanating from each (number of categories in brackets), as well as in terms of the number of impacts each category receives (number of influencing categories in brackets).

The SISP process has the greatest number of concepts, followed by the stakeholder profile and organisational context. The SISP process is impacted by more factors than any other category, with IS Plan implementation also featuring as a key category in this respect. The organisational context impacts categories in more ways than any other, followed by the stakeholder profile. Alignment is seen as an end in itself, as there are no relationships explicitly identified as arising from it. The SISP outcomes category is impacted by a large number of causal conditions, which confirms it as embodying the main consequences of carrying out SISP. These findings confirm those already noted through the matrix analysis.

Table 5.13: Tabular Representation of Theory in Use

Category	Concepts	Impacts	Impacted by
External Environment	6	7 (4)	0 (0)
Organisational Context	13	22 (6)	2 (2)
IS Function	12	7 (3)	3 (3)
Business Planning System	5	8 (4)	1 (1)
SISP Process	16	13 (5)	30 (5)
IS Plans & Strategies	5	4 (1)	7 (3)
Stakeholder Profile	14	14 (6)	5 (4)
Management & Mindset	4	3 (3)	2 (2)
IS Plan Implementation	8	1 (1)	14 (5)
Alignment	2	0 (0)	5 (4)
SISP Outcomes	6	2 (2)	12 (6)
TOTAL	91	81	81

i Story line – In Use

Due to the greater density of propositions in the theory in use as compared to the espoused theory, the story line is in this instance sectioned in to key theme areas as follows:

i. (a) SISP Goals

SISP goals are divided into the more traditional goals, and others that are not so commonly mentioned in literature.

SISP is necessary in order to:

- Develop plans for IS that support corporate goals (#1, #6, #7).
- Develop sustainable competitive advantage through IT (#7).

Other goals include the need to:

- Understand business needs through consultation, negotiation and discussion (#3).
- Control expenditure on IS and manage the budget (#2, #4).

- Develop plans useful for operational and project planning (#5, #6).
- Gain support and buy-in for IS plans, and hence gain funding (#3, #5).
- Satisfy organisational policy requirements (#5).

SISP is the link between business strategy and specific technology choices to be implemented [3.17]. Lack of a proper SISP process leads to implementation failure [4.11, 5.14], and/or IS that are not aligned with and supporting business priorities [3.2].

i. (b) The Role of Business Strategy

A clearly defined business strategy makes way for an SISP process to begin that can more easily identify IT initiatives that align with the strategy [3.2]. The emphasis of SISP can then be on using IS/IT to support the core business [4.22, 6.18]. Where there is lack of clarity in business strategy IT often takes the lead with regards to strategy formulation, with sometimes negative consequences [4.5]. Lack of business understanding on the part of IT, for example, leads to costly IT strategies, not aligned with the business goals [3.2, 4.19]. Following leading edge IT strategies therefore does not always result in positive Outcomes [2.7]. IT involvement in business planning helps to increase both IS understanding of business strategy and business understanding of IT's potential and limitations [4.7]. Where the CIO reports to the CEO [IS function characteristic] there is a greater possibility of this involvement in business planning [2.13, 4.6], but is dependent on the management mindset about IT [1]. Lack of integration between business planning and SISP ultimately leads to lost opportunities for identifying strategic use of IT [Outcome] [1.2] and rather identification of IT initiatives that are not aligned with business strategy [3.3].

i. (c) SISP Process

Where external consultants are used, adoption of the consultants' SISP methodological approach is likely [1.16, 4.14, 6.25, 7.9]. Use of a rigorous SISP methodology results in more comprehensive IS plans, [1.18, 3.12], but such an approach needs to be matched with the organisational environment in order for there

to be positive outcomes [6.38]. Appropriate application of a SISP methodology mitigates against excessive top management and stakeholder involvement [1.20].

A comprehensive SISP process minimises the chance of scope creep during implementation [7.15], but where the SISP review is lacking in comprehensiveness, IS plans remain static in the face of a changing environment, with negative repercussions for implementation [4.26]. A comprehensive IS plan provides detail necessary to ensure implementation [5.11]. A one to many relationship exists between what's in the strategy [IS Plan], and the number of projects to be implemented [3.16, 3.18, 7.13]. For each project derived from the strategy [IS plan], further operational planning must be carried out in order to implement it [3.16, 5.2, 5.18, 7.8]. An IS plan can be used to get buy-in and support for implementation of IT initiatives [5.2]. Evaluation criteria for assessing outcomes are typically defined in project plans [implementation issue][6.23]. Positive outcomes from SISP result in improvements in organisational performance [5.13, 6.23] and functional performance [6.23].

i. (d) Stakeholder Role

Stakeholder knowledge and input allows for informed planning and implementation of IT projects [2.14]. Stakeholder involvement furthermore helps in negotiating priorities and identifying projects with quick payback, thus easing implementation [5.6]. Use of informal and formal stakeholder involvement techniques further improves the chance of support for the IS plan and its implementation [3.6]. When credible stakeholders are involved in and support the SISP process, top management support for IT initiatives is enhanced [3.12], and hence funding for the plan and its implementation is likely [3.8, 7.12]. As a result, positive outcomes accrue [1.5]. A negative management mindset about IT on the other hand narrows stakeholder participation [4.20], increases the difficulty of obtaining support for IT implementations [1.28] and has negative repercussions for alignment between business and IT [1.28].

Constant communication with stakeholders leads to a better IS understanding of business priorities and needs, and therefore better alignment of IS with business goals [4.22]. Poor communication with stakeholders on the other leads to negative unintended outcomes [4.19]. Employing mechanisms for improving business-IS communications in SISP therefore enhances the chance of better identification of IS needs [1.5].

i. (e) Environmental Context

Environmental (business and IT) dynamism increases the difficulty of formal, comprehensive SISP [3.7, 4.1] leading to a greater need for planning reviews, plan flexibility and shorter SISP horizons [3.7, 4.8, 4.27, 5.8, 6.13]. Shorter SISP horizons *mitigate* against the need for more frequent plan revisions [4.8, 4.26]. Munificence of IT products and services [environmental trend] however requires that more formalised SISP processes be adopted to make sense of the plethora of options available to business. [2.13]. Difficulties of planning are compounded where there is an IT skills shortage [environmental dynamism] that makes hiring of suitably qualified IS staff problematic [3.1]. Unsubstantiated IT hype furthermore has the effect of reducing the credibility of IT and developing in organisations a negative management mindset about IT, especially where ill-informed IT strategies have been implemented [4.21].

i. (f) Organisational Context

A stable organisational environment reduces the chance of IS plan implementation difficulties, whereas power/political behaviours in organisations increase difficulties [1.7, 6.27]. Power plays and political machinations reduce the possibility of real stakeholder involvement in SISP [1.25].

A heterogeneous organisational environment requires that multiple objectives for SISP and its evaluation [outcomes] be considered, and there is typically a more diverse stakeholder profile in such environments [3.7, 3.11]. The need for wider consultations results in a more drawn out SISP process [3.5]. Heterogeneity

subsequently results in the deployment of diverse **IS Function** standards and systems to meet diverse business requirements [1.11].

As **organisations** grow larger, informal and *ad hoc* **SISP processes** become infeasible [2.13]. **Organisation** size has an impact on the feasibility of **SISP techniques** used [6.7, 6.8] and on how often **SISP** reviews can be held [6.13].

The type of **organisation** (information intensity) determines the ease with which IT value [**SISP outcomes**] can be evaluated [5.13] and impacts on the IT renewal strategy [**plan**], with public sector organisations tending to have longer cycles than those in the private sector [3.7]. The type of **organisation** furthermore dictates whether the focus of **SISP** is on processes, people and/or technology [6.6].

Organisation culture, norms and procedures impact on the style of and methodological approach to **SISP** [3.5, 3.12, 6.7, 6.15], the style of **plan** documentation [3.4, 5.14], the timing of **SISP** studies and the guidelines and procedures to be used [4.15, 4.18, 6.28, 6.30]. As a result the **SISP** cycle must fit in with the **business planning cycle** [4.15], but if **business planning** is done at an operational level, then **SISP** also tends to focus on operational issues [3.4]. Deviation from **organisational** norms and procedures may impede plan **implementation** [5.14].

Restrictive IT budgets in **organisations** lead to less planning at a strategic level, and shorter **SISP** horizons [4.27]. **Organisational** IT budgetary allocation procedures (e.g., pre or post planning approval) impact on **SISP characteristics** such as planning horizon and focus (financial control versus business needs) [4.20, 4.25, 5.14]. Where the CIO reports to the CFO, and where there have been large IT investments with little apparent return, the **SISP process** is likely to be focused on financial control [2.1, 2.13, 4.6]. A **SISP process** focused on financial control limits the chances of generating innovative ideas of IS use in support of business strategy [**Outcomes**] [1.7, 4.20].

i. (g) IS Function Context

As the **IS function** grows more complex, informal **SISP processes** become less feasible [2.13]. Where formal IT Management standards [**IS Function**] are employed, they are used to evaluate **SISP outcomes** [5.15]. Where IS plan **implementation** is outsourced, the division between **plan formulation** and implementation is more clearly delineated, but where it is internal, there is a more integrated flow [7.13]. An **IS function** Research & Development unit enables better **integration** of IS initiatives and business requirements [1.6].

ii Commentary

Key features of the theory in use include:

- Complexity, due to the large number of interrelated concepts and categories;
- An emphasis on clarity in business strategy as a necessary input to SISP;
- A sense that the planning process and implementation activities are seamlessly integrated activities following on from each other;
- A leading role for stakeholders;
- The strong presence of organisation culture, norms and procedures as influences and constraints on SISP process and plan implementation;
- Rationality (comprehensiveness, formalisation, financial control and top-down flow) as a key concept in SISP;
- Dynamism in the environment, which requires greater flexibility and adaptation in the SISP process and plans;
- Alignment as a key concern.

The paradoxical nature of SISP is clearly illustrated in this theory, whereby top-down rational characteristics are at the same time integrated with elements of stakeholder involvement, process and plan flexibility, and seamless integration between plan formulation and implementation. These latter elements are those often espoused by proponents of emergent and incremental rather than rational planning (Huysman *et al.* 1994, Lamprecht & Roode, 1999). This theory therefore validates the integrated

conceptual theory generated from academic literature, which highlighted the same elements as important concepts and categories in SISP.

Whilst incorporating elements of single loop learning through the pursuit of alignment goal, it also goes beyond that through a tempering of rationality, in recognition of a dynamic and turbulent business and IT environment that require a process characterised by adaptation. There are thus elements of double loop learning. This is noted by the emphasis on stakeholder involvement and consultation, and the need for SISP procedures to be adapted to fit environmental realities. However, certain assumptions remain unquestioned such as the need for clarity in business strategy as the point of departure for SISP, and the pursuit of alignment. Furthermore, organisational culture, norms and procedures are as if cast in concrete, with an assumption that SISP must fit and work within these unquestionable constraints.

5.5 Comparing Espoused Theory and Theory in Use

In total there were 72 discrete concepts identified within 11 categories in the espoused theory, and 91 in the theory in use. Concerning propositions, there were 51 in the espoused theory and 81 in the theory in use. This gives an indication that the theory in use was conceptually richer than the espoused theory. The theories will be compared firstly by category. For each category, comparisons will firstly take place in terms of the concepts per category, and then in terms of the effects (relationships) emanating from each category. Following this, an overall high-level comparison will be conducted.

5.5.1 Business Planning and its Effects

i Business Planning System Category

Within the business category are five main concepts – BP-ISP integration, clarity of business strategy, level of business planning, IT involvement in business planning and nature of organisation goals. In the espoused view, it is generally accepted that to facilitate SISP, business strategy should be clear, business planning should be at a strategic level, and a high level of IT involvement in business planning is required. With regards to level of integration, views vary from sequential integration to full integration, with the exception that IT-led strategy integration is not espoused. In use several organisations follow IT-led strategies, but with some negative consequences, which explains why it is not espoused. Furthermore, in practice, business strategies are not always clear, business planning is sometimes operational rather than strategic, and IT involvement in business planning is sometimes lacking. Organisational goals are an additional concept mentioned in use, relating to whether business units are focused on making profit or whether they adopt a wider shared vision of the business as a whole (see Table 5.14a).

Table 5.14a: Business Planning System Category – Concept Comparison

Concepts	Aggregate Espoused	Aggregate In Use
Organisation goals (profit focus - shared vision)		Variation
Business Strategy Clarity (Ambiguous - Clear)	Clear	Ambiguous
IT Involvement in Business Planning (Low - High)	High	Variation
BP ISP Integration (None - Full)	Some Variation	Wider Variation
Planning Level (Operational - Strategic)	Strategic	Variation

ii Business Planning System Effects

Table 5.14b below shows how the espoused theory and theory in use compare in terms of the effects emanating from the business planning system. On the whole the theory in use tends to be more detailed containing 8 propositions versus the 5 in the espoused theory. The propositions were analysed and grouped together according to patterns and trends that became apparent. Three groupings were identified and are shown in the table as well. Each will be discussed in turn below Table 5.14b.

Table 5.14b: Business Planning System Category – Proposition Comparison

Grouping 1	Espoused	In Use
Given that IS strategy is dependent on business strategy a clear <u>business strategy</u> should precede and inform the <u>SISP process</u> [4.4, 5.3, 7.1].	X	
Lack of a <u>business strategy</u> causes IT to take the lead in <u>strategy formulation</u> [4.5].		X
Lack of clarity in <u>business strategy</u> leads to non- <u>alignment</u> between business and IT [3.2].		X
Lack of understanding of <u>business strategy</u> leads to unintended <u>outcomes</u> resulting from SISP [4.19].		X
Clarity in <u>business strategy</u> leads to easier identification of IT initiatives (in the <u>SISP process</u>) that support that strategy [3.2].		X
Grouping 2	Espoused	In Use
<u>Business planning</u> should be linked to the <u>SISP process</u> [1.2, 2.2].	X	
<u>Business planning</u> and <u>SISP</u> are linked processes [1.2].		X
<u>SISP</u> cycle must fit in with the <u>business planning cycle</u> [4.15].		X
If <u>business planning</u> is done at an operational level, then <u>SISP</u> tends to focus on operational issues [3.4].		X
Grouping 3	Espoused	In Use
IT involvement in <u>business planning</u> leads to clearer <u>IS [function] understanding</u> of business strategy [5.4].	X	
IT involvement in <u>business planning</u> leads to clearer <u>business [stakeholder] understanding</u> of IT potential and limitations [4.7].	X	
IT involvement in <u>business planning</u> leads to a <u>SISP process</u> that can better identify opportunities to use IT strategically [1.15].	X	
IT involvement in <u>business planning</u> leads to clearer <u>business [stakeholder] understanding</u> of IT potential and limitations [4.7].		X
TOTAL	5	8

The first grouping relates to the influence of clarity in business strategy. It is espoused that a clear business strategy should precede and inform the SISP process, given that IS strategy is dependent on business strategy. The in use theory then provides an explanation (through several propositions) of why clarity is necessary by detailing the positive impacts of clarity, and negative impacts of ambiguity. For example, the absence of a business strategy often leads to IT taking the lead in strategy formulation.

This is not always a good thing, as was shown by the mindless spending that characterised the Y2K and dot com hype eras fuelled by IT-led strategies. Having got their fingers burned, many companies have replaced this with caution, and a reluctance to spend on IT (Manyika & Nevens, 2002). On the IT side, there has been a realisation that spending must be justified in terms of the value it adds to business, thus the call for business to be clear on their strategy, so that IT may know how to support it, and serve the organisation better. The lack of a clear business strategy has, in practice then, often lead to IT investments that are not aligned with business priorities.

The second grouping of propositions relates to the need for links between business planning and SISP. The need for integration is reflected in both the espoused theory and theory in use. Integration may vary from none at one extreme to full integration at the other. A hybrid approach that was espoused by a respondent (#2) suggests that at a high level the processes should be separate, but at the next level down there should be integration. The theory in use goes into more detail also mentioning the fact that the cycles for the two sets of planning processes need to be aligned. It also highlights the negative consequences of sequential linkage, which is when SISP feeds off business planning. In a situation where business planning is carried out at an operational level, SISP then also tends to be focused on operational rather than strategic issues. These aforementioned propositions relate to the practicalities of SISP, rather than espoused ideals, thus their presence in the theory in use, but not the espoused theory.

The third set of propositions concern the influence of IT involvement in business planning. The benefits of this involvement are strongly espoused, with some evidence of the benefit provided by the theory in use. With this grouping, rather than the theory in use being denser, it is the espoused theory. This gives an indication of a strongly held view, which is supported by evidence from practice.

In summary, the first grouping shows that for each espoused proposition, several theory in use propositions may be provided - as explanation, justification and rationale for what is espoused. In the second grouping, an espoused proposition is presented, and then considerations and precautions are provided by the theory in use. In the third

grouping the benefits of a phenomenon of interest are strongly espoused, and evidence is provided from theory in use. There is thus an interesting interplay between the espoused theory and theory in use. While it is important that what is espoused (the belief of how things should be done) should inform what is actually done, it is equally important that planners reflect on what they do, and learn from what works and what does not. Consciously absorbing these lessons will lead to a richer espoused conceptualisation of SISP that can better inform future SISP endeavours.

5.5.2 External Environment and its Effects

i External Environment Category

Within the external environment category a total of 7 distinct concepts were identified. The espoused view generated 4 – environmental dynamism, hostility and trends, then specific to IT, dynamism and munificence. In use there were 6 concepts – all of the espoused concepts excluding environmental trends, plus two more IT-specific factors – IT hype and skills shortage. The tendency is for the in use theory to generate more concepts, and to be more specific, thus the non-appearance of environmental trends from the in use view, which is a more general concept (Table 5.15a).

Table 5.15a: External Environment Category – Concept Comparison

Concepts	Aggregate Espoused	Aggregate In Use
IT hype (Damaging- Beneficial)		Damaging
IT Skills shortage (Scarcity – Availability)		Some scarcity
Environmental trends (No effect – Big impact)	Have an Impact	
Environmental hostility (Benign- Competitive)	Competitive	Competitive
Environmental dynamism (Static – Rapid)	Dynamic	Fairly dynamic
IT Dynamism (Static – Rapid)	Dynamic	Varies across sector
IT Munificence (Low – High)	High level	High level

ii External Environment and its Effects

Table 5.15b below shows the theory in use to have a greater number of propositions than the espoused theory. In general it is the dynamism within the external environment that is of main concern, especially with regards to IT. The growing pervasiveness of IT and the impacts of the hype that characterises IT discourse in the popular press are also considered as to their effect. An attempt is made at grouping the propositions to identify patterns. This time, five different sets were identified and are discussed below Table 5.15b.

Table 5.15b: External Environment Category – Proposition Comparison

Grouping 1	Espoused	In Use
Due to the dynamic <u>external environment</u> , <u>SISP</u> horizons should be made shorter [4.8, 5.8].	X	
Greater <u>environmental</u> (business and IT) dynamism leads to shorter <u>SISP</u> horizons [4.27, 5.8, 6.13].		X
Shorter <u>SISP</u> horizons <i>mitigate</i> against the need for more frequent plan revisions [4.8, 4.26].		(X)
Grouping 2	Espoused	In Use
IT <u>environmental</u> dynamism makes detailed <u>SISP</u> difficult [4.1].	X	
A highly dynamic IT <u>environment</u> results in only short-term <u>competitive advantage</u> being attainable through IT [6.18].	X	
Increasing IT <u>environmental</u> dynamism makes detailed <u>SISP</u> difficult [3.7, 4.1].		X
The IT skills shortage [<u>environmental</u> trend] makes hiring of staff for the <u>IS function</u> difficult [3.1].		X
Grouping 3	Espoused	In Use
Due to the dynamic <u>external environment</u> the <u>SISP process</u> should be made flexible enough to adapt to changes [1.15, 2.4, 7.4].	X	
IT <u>environmental</u> dynamism leads to IS decisions made in the <u>SISP process</u> being reviewed nearer to implementation [3.7].		X
Grouping 4	Espoused	In Use
The growing pervasiveness of IT in business [<u>environmental trend</u>] requires greater levels of <u>BP-ISP integration</u> . [7.2].	X	
Increasing munificence of IT products and services [<u>environmental</u> trend] requires more formalised <u>SISP processes</u> to make sense of them. [2.13].		X

Table 5.15b (ctd.)

Grouping 5	Espoused	In Use
Unsubstantiated IT hype [in the <u>external environment</u>] reduces the credibility of IT, and leads to the development of a negative <u>management mindset</u> about IT [4.21].		X
Unsubstantiated IT hype [in the <u>external environment</u>] reduces the credibility of IT, as there are negative consequences for <u>organisations</u> that follow the hype [4.21].		X
TOTAL	5	7

The first grouping concerns the impact of dynamism on SISP horizons. It is espoused that these should be shorter, due to this dynamism. The theory in use supports this proposition, and adds further detail by noting that by having shorter SISP horizons, the need for revision of plans is reduced. This is likely due to the fact that with shorter horizons more specific and accurate planning is possible.

The second grouping points to the increased difficulty of detailed planning in a rapidly changing IT environment. By way of example, it is espoused that this dynamism impacts typical outcomes of SISP such as achieving competitive advantage through IT. In a highly dynamic IT environment, sustainable competitive advantage is difficult due to the ability of competitors to quickly replicate and improve on any IT innovation. This assertion resonates with Carr's (2003) polemic on "IT Doesn't Matter", which controversially suggests that IT is now akin to utilities such as the telephone and electricity, providing no strategic advantage. The theory in use also asserts that SISP is difficult due to IT dynamism, but illustrates this rather by noting that due to the scarcity of IT skills - an aspect of dynamism according to Ranganathan & Sethi (2000), hiring qualified IS staff is difficult. Comparing the example of difficulty provided in the espoused theory with that provided in the theory in use sheds light on the different mindsets that inform these alternative perspectives. The competitive advantage concept, which in practice has been found as difficult to achieve through formal planning (Lederer & Sethi, 1996) is used in the espoused theory. This confirms it as an espoused SISP objective, which in practice remains elusive (Hackney *et al.*, 2000). The example provided by the theory in use is more

modest, relating to the practical difficulty of hiring qualified IS staff in an environment of IT skill scarcity.

Grouping 3 relates to the need for flexibility in SISP as a result of environmental dynamism. Such a proposition is espoused, and is also given greater specificity in the theory in use, where it is mentioned that SISP decisions are reviewed closer to implementation due to the changed conditions arising from dynamism. For example, two respondents noted that at best it is possible to plan for the IT platform to use, but not specific equipment, due to the rapid changes in the market place (#3, #4). Decisions on equipment needed to be revisited when the time for specific project implementation arose, through a process of consultation with stakeholders [#3].

Grouping 4 relates to the increased ubiquity of IT. In the espoused theory because of the increased pervasiveness of IT, it is proposed that organisations should more fully integrate business planning and SISP. The in use theory refers to the increasing munificence of IT products and services, and how that is leading to more formalised SISP, in order to make informed decisions regarding a plethora of IT options. The pervasiveness of IT is a more general concept than munificence of IT products and services, which reflects again the greater specificity that often characterises the theory in use.

Finally grouping 5 refers to the concept of unsubstantiated hype that is often churned out by the IT media and vendors, and its damaging effects. Such hype misleads business management into making ill-informed decisions, leading to management developing a negative mindset about IT when IT investments do not deliver the expected returns. This is evidenced by the fall out from the Y2K hype and the dot com bomb and ERP failures. There is no reference made to it in the espoused theory, but its effects are real in practice thus the presence of propositions concerning it in theory in use.

In summary, grouping 1 shows that an espoused proposition is confirmed in the theory in use, with additional explanation also provided. The second grouping shows that the espoused theory tends to be more conceptual whereas the theory in use tends

to refer to concepts that are more grounded in real world practice. Grouping 3 in like manner demonstrates the greater specificity of the theory in use as does grouping 4. Finally grouping 5 refers to propositions concerning the theory-in-use only. These are derived from experiences of difficulty when planning under conditions of uncertainty, and the prevailing mindsets that have to be engaged with when trying to build support for new initiatives. These propositions would be useful if, for example, planners reflect on coping mechanisms they use to deal with uncertainty, and negative attitudes towards IT from management. Such ideas can be incorporated into an espoused theory that could be useful for future SISP interactions.

5.5.3 Organisational Context and its Effects

i Organisational Context Category

The number of concepts identified from espoused views were far less (5) than those garnered from in use views (13). Comparing the concepts in each reveals that this difference is mainly due to the fact that the dimensional values of some of the concepts are often taken as given in the espoused theory. For example whether the organisation should be public or private does not feature in the espoused view of SISP. Other issues, such as organisation size, structure, and culture are again often taken as given in the espoused theory. These concepts relate to the context in which SISP takes place. As such they are more often considered in practice, as factors constraining or influencing SISP, but are often overlooked in the espoused theory (Table 5.16a).

Table 5.16a: Organisational Context Category – Concept Comparison

Concepts	Aggregate Espoused	Aggregate In Use
IT Budget Restrictions (Tight – Loose)		Slight variation
Organisation growth (Slow – Rapid)		Slight variation
Organisation Structure (Decentralised – Centralised)		Variation
Organisation Type (Public – Private)		Variation
Organisational Changeability (Resistant – Flexible)		Variation
Organisational Core function (Ambiguous – Clear)		Variation
Organisational Homogeneity (Homogeneous – Heterogeneous)		Variation
Power/Political Behaviour (Little – Pervasive)		Variation
Organisation Size (Small – Large)	N/A	Large
Organisation Culture (Diverse – Homogeneous)	Need to consider it	Variation
Organisational Dynamism (Predictable – Volatile)	Reality dictates	Variation
IT Budgetary Allocation (Pre planning – Post planning)	Slight Variation	Variation
Organisation Norms & Procedures (Bypassed – Complied with)	Variation	Variation

ii Organisational Context Effects

As with the conceptual density of this category, and perhaps as a result of it, there are far more propositions emanating from the theory in use than the espoused theory. In this instance, 6 different groupings are identified and will be discussed below Table 5.16b.

Table 5.16b: Organisational Context Category – Proposition Comparison

Grouping 1	Espoused	In Use
Changes in the <u>organisational</u> context may impact negatively on IS plan <u>implementation</u> . [5.12].	X	
A stable <u>organisational</u> environment reduces the chances of IS plan <u>implementation</u> difficulties, whereas power/political behaviours increase difficulties [1.7, 6.27].		X X
Power/political plays in <u>organisations</u> reduce the possibility of real <u>stakeholder</u> involvement in SISP [1.25].		X
Where there are changes in the <u>organisational</u> context necessary changes should be made to the <u>IS plans</u> [5.7].	X	
Where there are higher levels of <u>organisational</u> dynamism, <u>SISP</u> horizons are shorter and SISP <u>plans</u> more flexible [4.8, 5.8].		X X
Grouping 2	Espoused	In Use
The <u>organisational</u> approach to IT budgetary allocation (pre- or post-planning) determines whether the primary focus of the <u>SISP process</u> will be on financial control [4.3].	X	
<u>Organisational</u> IT budgetary allocation procedures_ (pre or post planning) impact on <u>SISP characteristics</u> such as planning horizon and focus (financial control versus business needs), with post-planning allocation more advantageous than pre-planning allocation [4.20, 4.25, 5.14].		X
Restrictive IT budgets in <u>organisations</u> lead to less strategic IS planning and shorter <u>SISP</u> horizons [4.27].		X X
Grouping 3	Espoused	In Use
The <u>SISP methodological</u> approach should be customised to suit the particular <u>organisation culture</u> [3.5, 5.6].	X	
<u>Organisation</u> culture impacts on the style of and methodological approach to <u>SISP</u> [3.5, 3.12, 6.7, 6.15].		X
<u>Organisation</u> culture, norms and procedures impact on the style of <u>plan</u> documentation [3.4, 5.14].		X
<u>Organisational</u> norms and procedures should influence the <u>SISP</u> guidelines and procedures used [6.30].	X	
<u>Organisation</u> norms and procedures determine the timing of <u>SISP</u> studies and the guidelines and procedures to be used for planning, implementation and evaluation [4.15, 4.18, 6.28, 6.30].		X
Deviation from <u>organisational</u> norms and procedures may impede plan <u>implementation</u> [5.14].		X

Table 5.16b (Ctd.)

Grouping 4	Espoused	In Use
<u>Organisation</u> size determines the feasibility of <u>SISP</u> techniques to be used [6.32, 6.33, 6.39].	X	
<u>Organisation</u> size has an impact on the feasibility of <u>SISP techniques</u> used [6.7, 6.8].		X
<u>Organisation</u> size influences how often <u>SISP</u> reviews can be held [6.13].		X
As <u>organisations</u> grow larger, informal and <i>ad-hoc</i> <u>SISP processes</u> become infeasible [2.13].		X
Grouping 5	Espoused	In Use
Lack of <u>organisational</u> homogeneity leads to diverse <u>IS Function</u> standards and systems [1.11].		X
The greater the <u>organisational</u> heterogeneity, the more diverse the <u>stakeholders</u> leading to wider consultations in SISP [3.5].		X
A heterogeneous <u>organisational</u> environment requires that multiple objectives for SISP and its evaluation [<u>outcomes</u>] be considered [3.11].		X
Clarity on the <u>organisation</u> core function leads to <u>SISP emphasis</u> being on support for the core [4.22, 6.18].		X
Grouping 6	Espoused	In Use
The type of <u>organisation</u> (information intensity) determines the ease with which IT value [<u>SISP outcomes</u>] can be evaluated [5.13].		X
The type of <u>organisation</u> impacts on the IT renewal strategy [<u>plan</u>], with public sector organisations tending to have longer cycles than those in the private sector [3.7].		X
The type of <u>organisation</u> dictates whether the focus of <u>SISP</u> is on processes, people and/or technology [6.6].		X
TOTAL	6	22

Grouping 1 concerns the impacts of organisational dynamism and volatility. It is espoused that changes in the organisational context may have negative repercussions for IS plan implementation, which as Hackney *et al.* (2000) also points out often require specifications to be temporarily frozen. These organisational changes often necessitate a change in the IS plans and specifications. The theory in use provides support for this, but also makes reference to the negative impact of power/political behaviours, which have an impact on implementation, and constrain the possibility of genuine stakeholder involvement.

Grouping 2 relates to the IT budget and its allocation. In the espoused theory it is indicated that where the budget is allocated before planning, then the focus during SISP tends to be on financial control. This is confirmed by the theory in use where it is also noted that this has led to shorter SISP horizons, and less of a strategic focus in planning.

Grouping 3 relates to organisational culture, norms and procedures. It is espoused that the SISP methodological approach should be matched to the organisational culture, and that organisation norms and procedures influence the SISP procedures. The theory in use, confirms these assertions noting that organisational culture influences the style and approach to planning and documentation. Organisation norms and procedures furthermore influence the whole planning cycle and it is cautioned that by deviating from these procedures, plan implementation may be impeded.

In grouping 4, organisation size is espoused as a factor to consider when assessing the feasibility of SISP techniques to use. This is confirmed by the theory in use where it is also noted that organisation size has a bearing on, for example, how often SISP reviews can be held, and that as organisations grow larger, informal *ad hoc* approaches to SISP become infeasible.

Grouping 5 consists of a set of propositions that address the impact of organisational heterogeneity on SISP. These all arise from theory in use, and no espoused propositions relating to them were identified. In like manner grouping 6 consists of theory in use propositions related to organisation type, with no corresponding espoused theory.

In summary, the first 4 groupings confirm the trend of the espoused theory being more parsimonious and high-level, with the theory in use providing more specific detail, explanation, and cautionary statements. In addition, the last two groupings concern propositions from theory in use only. A striking feature of this analysis is therefore that the effects of organisational context on SISP are more richly described by the theory in use. The theory in use is more grounded in the “exigencies of daily activity”

(Strauss & Corbin, 1998) than the espoused, which is on the other hand closer to “grand ideals”. The practicalities of SISP are to a large extent related to the organisational context, its culture and norms, thus the greater recognition of the organisational effects in the theory in use.

5.5.4 IS Function and its Effects

i IS Function Category

A total of 14 concepts were identified in this category – 8 from the espoused view, and 12 from the in use view, with some overlap of factors. Once again, the greater density of in use concepts is due to the in use theory being more grounded in daily organisational life. Those concepts that are espoused, and yet not mentioned in use may relate to factors that are not considered carefully enough in practice. For example, the IT appropriateness concept reflects whether cognisance is taken of the environment into which a technology is being introduced. A respondent noted, for example, that an ERP system with embedded assumptions about best practices that work in a developed country commercial organisation might not be suitable for use in a public service organisation in a developing country (Table 5.17a).

Table 5.17a: IS Function Category – Concept Comparison

Concepts	Aggregate Espoused	Aggregate In Use
IS Complexity		High
IS function location (Internal – Outsourced)		Variation
IS function services (Inadequate – Satisfactory)		Variation
IS function Structure (Decentralised – Centralised)		Variation
IS performance measurement (Ad hoc – Formal)		Variation
IT Management uniqueness (Similar to other functions – Different)		Variation
IT appropriateness to environment (Incompatible – Compatible)	Compatible	
IS function Support (Reactive – Proactive)	Proactive	
IT Management Standards (Proprietary – Customised)	Variation	Variation
Research & Development Unit (None – Exists)	Exist	Variation
IT investment (Small – Large)	Large	Large
CIO level (Operational – Strategic)	Strategic	Variation
Role of IS (Operational – Strategic)	Strategic	Variation
IS function standards (Diverse – Singular)	Variation	Variation

ii IS Function Context Effects

Concerning IS function context, 7 propositions are derived from in use views, as compared to 5 from the espoused. These are grouped below into 5 sets (see Table 5.17b), each of which are compared across the two theories.

Table 5.17b: IS Function Category – Proposition Comparison

Grouping 1	Espoused	In Use
Where the CIO reports directly to the CEO [IS Function positioning], a high-level of understanding and clarity on business strategy should be gained (for the benefit of SISP) [4.6].	X	
Where the CIO reports to the CEO [IS function characteristic] there is a greater possibility of IT involvement in business planning [2.13, 4.6].		X
Where the CIO reports to the CFO [IS function characteristic], the SISP process is more likely to be focused on financial control [2.13].		X
Grouping 2	Espoused	In Use
Where large IT investments [IS Function] are made, an SISP process is seen as necessary [2.1, 6.16].	X	
Where IT plays a strategic role in organisations [IS function context], an SISP process is seen as critical [2.1].	X	
Due to large IT investments [IS Function] SISP processes tend to focus on financial control [2.1, 4.6].		X
As the IS function grows more complex, informal SISP processes become less feasible [2.13].		X
Where IS plan implementation is outsourced [IS function characteristic], the division between plan formulation and implementation [SISP characteristic] is more clearly delineated [7.13].		X
Grouping 3	Espoused	In Use
A Research & Development unit in the IS function should help improve the SISP process by speeding up decision-making [2.3].	X	
An IS function Research & Development unit enables better integration of IS initiatives and business requirements [SISP characteristic] [1.6].		X
Grouping 4	Espoused	In Use
The extent to which formal IT management standards [IS Function] are used determines the extent to which they inform the SISP process [2.3, 3.12].	X	
Where formal IT Management standards [IS Function] are employed, they are used to evaluate the SISP outcomes . [5.15]		X
TOTAL	5	7

Grouping 1 relates to the reporting position of the CIO. In the espoused theory greater clarity and understanding of business strategy is accrued by IS if the CIO reports to

the CEO. The theory in use mentions that such a reporting relationship leads to increased IS involvement in business planning, which therefore explains how, as was espoused, increased understanding is obtained. It is also mentioned in use, that where the CIO reports to the CFO, then a focus on financial control is likely.

Grouping 2 relates to the role of IT in the organisation. It is espoused that where the role of IT is strategic and where there are large investments in IT, SISP is seen as necessary and critical. In use it is more specifically noted that the consequence of large IT investments is a tendency to focus on financial control to ensure that there is a return on investment. This focus is due to the perception that IT is resource-hungry and therefore spending on it needs to be monitored closely. It is also mentioned that greater complexity of IS requires that more formal SISP processes be employed. Finally it is noted in the theory in use that where IS implementation is outsourced, the division between plan formulation and implementation is more clearly delineated.

In grouping 3 it is espoused that where there is a research and development unit, the process of SISP is speeded up, as when an opportunity is identified for use of new technology, research has already been done, and there is an available pool of knowledge on the innovation to draw from. In use, it is noted that such a research and development unit enables better integration of IS and business needs, as research and development is carried out on specific problems facing a business unit, through a process of dialog and discussion with stakeholders. As a result there is no need to wait for a formal SISP session in order to discuss strategic initiatives. The research and development unit provides an informal mechanism for achieving this end that may be more effective than the formal.

In grouping 4, IT management standards (e.g. COBIT and ITIL), it is espoused, will inform the SISP process in organisations where they are used, and in use it is mentioned that they are utilised to evaluate SISP outcomes.

In summary, then, grouping 1 shows that theory in use provides explanation and further detail concerning espoused theory, whilst grouping 2 and 4 point to the greater specificity in the theory in use. In grouping 3, the espoused theory and theory in use provide alternative propositions concerning a phenomenon.

5.5.5 SISP Process and its Effects

i SISP Process Category

22 espoused versus 16 in use concepts were identified in the SISP process category. This goes against all other trends, which show the in use categories to be more dense than the espoused. The comparison of perspectives in Section 5.2 revealed also the same pattern, whereby a large number of prescriptions were espoused for SISP. In use, there were fewer prescriptions, this being attributed to the fact that in practice, a list of prescriptions is not always followed when completing a task. Thus the same logic may explain the anomaly noted here (Table 5.18a).

Table 5.18a: SISP Process Category – Concept Comparison

Concepts	Aggregate Espoused	Aggregate In Use
SISP Methodology change (Resisted - Accepted)		Variation
SISP Methodology preference (Irrational - Rational choice)		Variation
Technique appropriateness (Inappropriate - Appropriate)	Appropriate	
SISP Change Management (Overlooked - Considered)	Consider	
SISP Opportunity identification (None - Facilitated)	Facilitated	
SISP Flexibility (Rigid - Flexible)	Flexible	
SISP Levels (Single - Multiple)	Multiple	
SISP Approach (Social - Technical)	Variation	
SISP Flow (Top-down - Bottom-up)	Variation	
SISP Prioritisation (Overlooked - Considered)	Variation	
SISP Review (Superficial - Comprehensive)	Comprehensiveness	Variation
SISP Adaptation (Rigid - Flexible)	Flexible	Variation
SISP Research & Development (None - Integrated)	Integrated	Variation
SISP Focus (Control - Creativity)	Less financial control	Variation
SISP Frequency (Once-off - Continuous)	Periodic	Variation
SISP Alacrity (Drawn out - Rapid)	Rapid	Variation
SISP level (Operational - Strategic)	Strategic	Variation
SISP Feedback (Weak - Strong)	Strong	Variation
BP-ISP Integration (None - Full)	Variation	Variation
SISP Activity set (Narrow - Broad)	Variation	Variation
SISP Comprehensiveness (Shallow - Detail)	Variation	Variation
SISP Formalisation (Informal - Formal)	Variation	Variation
SISP Horizon (Short-term - Long)	Variation	Variation
SISP Methodological Approach (Proprietary - Customised)	Variation	Variation

ii SISP Process Effects

Concerning the effects of the SISP process, the 12 espoused and 13 in use propositions are just about equal in number. These are grouped into 8 sets for the purposes of comparison (Table 5.18b).

Table 5.18b: SISP Process Category – Proposition Comparison

Grouping 1	Espoused	In Use
Carrying out SISP should minimise the chances of developing IS that do not align with business strategy [alignment]. [3.1, 5.1, 6.21].	X	
Lack of a proper SISP process results in IS investments that are not aligned with business priorities [3.2].		X
Lack of a proper SISP process increases the chance of implementation failure [5.14].		X
Lack of a proper SISP impacts negatively on outcomes of implementation [4.11].		X
SISP is the link between business strategy and specific technology choices to be implemented [3.17].		X
Grouping 2	Espoused	In Use
Assuming that competitive advantage can be planned for, the SISP process is carried out in order to identify initiatives that will give the organisation a competitive advantage through IT [outcomes] [3.1, 6.20].	X	
Following leading edge IT-led strategies does not always result in positive Outcomes [2.7].		X
Grouping 3	Espoused	In Use
The greater the level of BP-ISP Integration the greater the likelihood of identifying opportunities to use IT strategically [Outcomes] [1.2].	X	
Poor BP-ISP integration leads to lost opportunities to identify strategic use of IT [Outcome] [1.2].		X
Lack of BP-ISP integration leads to non- alignment [3.3, 4.4].	X	
The consequence of poor BP-ISP integration is identification of IT initiatives that are not aligned with business strategy [3.3].		X

Table 5.18b (Ctd.)

Grouping 4	Espoused	In Use
A SISP process that comprehensively examines issues can be used to justify to management the importance of certain IT initiatives, leading to a changed management mindset about IT [1.20].	X	
A more comprehensive SISP process should result in a broader stakeholder profile [3.10].	X	
A comprehensive SISP process minimises the chance of scope creep during implementation [7.15].		X
Grouping 5	Espoused	In Use
Following a well-defined SISP methodology should lead to the production of a comprehensive IS plan [1.20].	X	
Use of a rigorous SISP methodology results in more comprehensive IS plans [1.18, 3.12].		X
An SISP methodological approach that matches with the organisational environment results in positive Outcomes , such as alignment [6.38].		X
Appropriate application of SISP methodology mitigates against excessive top management and stakeholder involvement [1.20].		X
Grouping 6	Espoused	In Use
Where the focus of the SISP process is on financial control, evaluation of outcomes should be with respect to planned budget performance [4.10].	X	
An SISP process focused on financial control limits the chances of generating innovative ideas of IS use in support of business strategy [Outcomes] [1.7, 4.20].		X
Grouping 7	Espoused	In Use
Prioritisation of IT spending [in the SISP process] should lead to greater alignment of IT investments with the core services. [3.2, 4.12].	X	
Prioritisation of IT initiatives through the SISP process should facilitate implementation [2.3].	X	
Grouping 8	Espoused	In Use
Continually reviewing SISP outputs and outcomes should reduce the chance of non-alignment [3.3].	X	
A comprehensive review of plans, implementation and outcomes derived through SISP should lead to greater alignment of IS with business objectives [1.15, 2.3].	X	
Where the SISP review is lacking in comprehensiveness, IS plans are rigid and remain unchanged [4.26].		X

Grouping 1 is concerned with the motivations for carrying out SISP. It is espoused that SISP minimises the chance of non-alignment, and theory in use then provides support, indicating also that improper SISP impacts also on implementation.

In grouping 2, it is espoused that through SISP competitive advantage through IT is attainable. The competitive advantage goal is, however, absent from the in use theory, which gives credence to the views of sceptics who assert that in practice competitive advantage emerges rather than being formally planned for (Hackney *et al.*, 2000).

In grouping 3 it is espoused that lack of BP-ISP integration leads to non-alignment, and this is confirmed in use. It is also espoused that BP-ISP integration, on the other hand leads to positive outcomes. This is again confirmed by the theory in use.

Grouping 4 concerns comprehensiveness in SISP where it is espoused that comprehensiveness allows for informed opinion to be put forward as justification for IT initiatives. This leads to a possible changed management mindset. Comprehensiveness, it is espoused, also requires that a variety of stakeholders be involved. The theory in use makes no mention of these propositions, but rather notes a benefit of comprehensiveness as being to reduce scope creep during implementation. This is because a thorough process reduces the chance of incorrect scoping.

In grouping 5 it is espoused that applying a well-defined SISP methodology should result in more comprehensive plans, whilst in use, added benefits mentioned include appropriate involvement of stakeholders and an increased chance of alignment, if the methodology is matched to the organisational culture.

In grouping 6, the in use view points to the negative impacts of focusing solely on financial control in SISP, whilst the espoused view is that where there is such a focus it is important that the evaluation criteria also have the same focus.

In grouping 7 prioritisation of IT initiatives is espoused as important in order to facilitate implementation and to enhance alignment, but no such proposition concerning prioritisation is mentioned in use.

In grouping 8 it is espoused that comprehensive reviews in SISP allow for alignment to be maintained, but in use the proposition notes more specifically that where the reviews are lacking in comprehensiveness, IS plans remain unchanged. This impacts negatively on alignment.

In summary, in grouping 1 and 5 the theory in use is more explanatory and descriptive, in grouping 2 more cautionary, and in grouping 8 more specific than the espoused theory. In other groupings the differences are not so distinct.

5.5.6 Stakeholder Profile and its Effects

i SISP Stakeholder Profile Category

6 espoused concepts are identified, and 14 in use concepts in the stakeholder profile category. The greater number of in use concepts is due to the greater level of detail provided from that perspective. It is somewhat easier for respondents to describe what was done, and how it was done rather than their beliefs on how it should have been done. The concepts that appear as espoused and not in use tend to be more general, such as whether the rationale for participation is considered, and who should control the SISP process (Table 5.19a).

Table 5.19a: Stakeholder Profile Category Concept Comparison

Concepts	Aggregate Espoused	Aggregate In Use
Consultant influence (Minor – Major)		Variation
IS function skills (Internal – External)		Variation
Stakeholder Consultation (Narrow – Broad)		Variation
Stakeholder Credibility (Low – High)		Variation
Stakeholder Involvement Technique (Informal – Formal)		Variation
Stakeholder profile (IT only – Broad)		Variation
Stakeholder satisfaction (Dissatisfied – Satisfied)		Variation
Stakeholder support (None – Strong)		Variation
Top Management Involvement (None – Excessive)		Variation
SISP Control (CEO – CIO)	CEO	
Participation Rationale (Not considered – Considered)	Considered	
Stakeholder agreement (Lacking – Strong)	Strong	
Stakeholder Involvement (None – Excessive)	Balanced	Variation
Stakeholder communication (Minimal – Continual)	Continual	Variation
Stakeholder Competence (Lacking – High competence)	High	Variation
Planner Training (No consequence – Impacting practice)	Impacting	Variation
Sense of ownership (None – Strong)	Strong	Variation

ii SISP Stakeholder Profile and its Effects

7 propositions are espoused with 12 derived from in use views concerning the impacts of the stakeholder profile. 3 main groupings of propositions are identified as shown in Table 5.19b, and as discussed below.

Table 5.19b: Stakeholder Profile Category – Proposition Comparison

Grouping 1	Espoused	In Use
Engendering a sense of ownership of IT initiatives by <u>stakeholders</u> should positively impact on <u>alignment</u> [2.11].	X	
Constant communication with <u>stakeholders</u> improves the ability to maintain <u>alignment</u> [2.7, 4.13].	X	
Mechanisms for improving <u>business-IS communications</u> lead to better identification of <u>IS needs in SISP</u> [1.5].		X
Good communication with <u>stakeholders</u> leads to a better IS understanding of business priorities and IS needs, and therefore better <u>alignment</u> of IS with business goals [4.22].		X
Poor communication with <u>stakeholders</u> in SISP leads to negative unintended <u>outcomes</u> [4.19].		X
Grouping 2	Espoused	In Use
<u>Stakeholder</u> involvement [in SISP] leads to buy-in, which eases <u>implementation</u> [3.19, 7.12].	X	
<u>Stakeholder</u> involvement improves the relevance of the <u>SISP process</u> and usefulness of <u>IS plans</u> [5.9, 6.37].	X	
<u>IS plans</u> should contain strategies that management and other <u>stakeholders</u> have come to agreement on [3.8, 6.3, 6.5].	X	
<u>Stakeholder</u> involvement in SISP helps in negotiating priorities and identifying projects with quick payback, thus easing <u>implementation</u> [5.6].		X
Use of informal and formal <u>stakeholder</u> involvement techniques improves the chance of support for the <u>IS plan</u> and its <u>implementation</u> [3.6].		X
Widespread <u>stakeholder</u> involvement and support leads to approval of IS plans and funding for <u>implementation</u> [3.8, 7.12].		X
Where credible <u>stakeholders</u> are involved in the SISP process, support for the <u>plan</u> and its <u>implementation</u> is likely [3.8].		X
Top <u>management</u> support for IT initiatives is enhanced when credible <u>stakeholders</u> are involved in and support the SISP process [3.12].		X
Where <u>stakeholders</u> are involved in the SISP process, there is a greater chance of positive <u>outcomes</u> accruing [1.5].		X
Where there is wide <u>stakeholder</u> consultation a more drawn out <u>SISP process</u> ensues [3.7].		X
<u>Stakeholder</u> input informs the selection and implementation [in the <u>SISP process</u>] of IT projects [2.14].		X

Table 5.19b (ctd)

Grouping 3	Espoused	In Use
Formalised and integrated <u>stakeholder</u> training on planning should result in an improved <u>SISP process</u> [1.15].	X	
The level of <u>stakeholder</u> competence influences the quality of the <u>SISP process</u> [6.27, 6.37].	X	
Where external <u>consultants</u> are used, adoption of the consultants' <u>SISP methodological approach</u> is likely [1.16, 4.14, 6.25, 7.9].		X
TOTAL	7	12

In grouping 1, good communication from the espoused perspective leads to alignment, and from the in use view more specifically to better identification of IS needs. The in use view points to the greater need for consultations where there is a diverse stakeholder profile and points to the fact that multiple strategies for involving users lead to greater support for the IS plan and its implementation.

Grouping 2 concerns stakeholder involvement, where it is espoused that this improves relevance of SISP and plans, and enhances implementation. In use, the positive impact of stakeholder involvement on outcomes is also noted. Stakeholder agreement, it is espoused, results in a more useful IS plan. In use it is noted that a diverse stakeholder profile results in a lengthy SISP process, and key stakeholder support often convinces top management of the plan usefulness.

In grouping 3 the espoused theory holds that integrated planner training improves the quality of SISP and competent stakeholders lead to improved quality of SISP. In use, consultant influence determines the SISP approach adopted.

In summary, the two views are more or less congruent, with the in use theory tending to focus in greater detail on the practicalities, such as engendering support from key stakeholders in order to convince top management to support the plan. Impacts on the plan and implementation are more the focus with the in use view, whereas with espoused it is more on the formulation process. This possibly demonstrates the practical concerns related to implementation, rather than just a focus on plan formulation.

5.5.7 Management & Mindset and its Effects

i Management & Mindset Category

There are 2 espoused concepts and 4 in use concepts, the espoused being more general in nature than the in use, due to the differences in nature between the two perspectives (Table 5.20a).

Table 5.20a: Management & Mindset Category – Concept Comparison

Concepts	Aggregate Espoused	Aggregate In Use
Management Focus (Operational – Strategic)	Strategic	
Management IT appreciation (Weak – Strong)	Strong	
CEO-CIO Relationship (Stormy – Harmonious)		Variation
Management Attitude towards IT (An expense – An investment)		Variation
Management Support for IT initiatives (Minimal – Positive)		Variation
Managerial Directives (Little Influence – Big Influence)		Variation

ii Management & Mindset Effects

The 3 in use relationships in Table 5.20b below demonstrate that according to theory in use management mindset about IT impacts on alignment, stakeholder involvement in SiSP, and implementation. The espoused view shows that there should be an impact on the SiSP process – specifically that a strategically focused mindset leads to strategic focus in SiSP. It is probably derived from experiences of attempting to plan strategically for IS in an environment where business planning is being carried out with a focus on operational issues.

Table 5.20b: Management & Mindset Category – Proposition Comparison

	Espoused	In Use
A <u>Management Mindset</u> focused on strategic issues should enhance the strategic focus in the <u>SISP Process</u> [3.10].	X	
A negative <u>Management Mindset</u> impacts negatively on the social dimension of <u>Alignment</u> between business and IT [1.28].		X
A negative <u>Management mindset</u> about IS narrows <u>stakeholder</u> participation [4.20].		X
A negative <u>management mindset</u> about IT increases the difficulty of obtaining support for IT <u>implementations</u> [1.28].		X
TOTAL	1	3

5.5.8 IS Plans & Strategies and their Effects

i IS Plans & Strategies - Category

4 espoused concepts were identified and 5 in use, thus a fairly even balance (Table 5.21a).

Table 5.21a: IS Plans & Strategies Category – Concept Comparison

Concepts	Aggregate Espoused	Aggregate In Use
IS plan documentation (Padded – Key Issues)		Variation
IS Plan flexibility (Rigid – Flexible)		Flexible
IS Plan Scope (Small – Large)	Variation	
IS plan comprehensiveness (Shallow- Detailed)	Variation	Variation
IS Plan Usefulness (Useless – Valuable)	Useful	Valuable
IT renewal strategy (Laggard – Leading Edge)	Balanced	Variation

ii IS Plans and Strategies - Effects

There are twice as many in use relationships (4) than espoused (2). It is espoused that an appropriate IT replacement strategy will have positive consequences, and that

detailed IS plans facilitate implementation. There is congruence with the latter in the in use theory, which in addition recognises that for each strategic initiative, there are usually several projects to be implemented, which require further operational planning. Creation of an appropriate IS plan can be used to obtain buy-in for implementation (Table 5.21b).

Table 5.21b: IS Plans & Strategies Category Proposition Comparison

	Espoused	In Use
An appropriate <u>strategy</u> for <u>IT</u> replacement (neither out of date nor leading edge) should lead to positive <u>outcomes</u>	X	
A sufficiently detailed <u>IS plan</u> should facilitate <u>implementation</u> of the plan [1.20]	X	
A comprehensive <u>IS plan</u> provides detail necessary to ensure <u>implementation</u> [5.11].		X
An <u>IS plan</u> can be used to get buy-in for support for <u>implementation</u> of IT initiatives [5.2].		X
A one to many relationship exists between what's in the strategy [<u>IS Plan</u>], and the number of projects to be <u>implemented</u> [3.16, 3.18, 7.13].		X
For each project derived from the strategy [<u>IS plan</u>], further operational planning must be carried out in order to <u>implement</u> it [3.16, 5.2, 5.18, 7.8].		X
TOTAL	2	4

5.5.9 IS Plan Implementation and its Effects

i IS Plan Implementation Category

8 in use concepts are identified in contrast to 5 espoused. Once again the richer description of practice as compared to espoused ideals is evident (Table 5.22a).

Table 5.22a: IS Plan Implementation Category – Concept Comparison

Concepts	Aggregate Espoused	Aggregate In Use
Formulation - Implementation integration (Separate - Integrated)		Variation
IS Implementation failure (Few – Many)		Variation
Operational Planning (Overlooked- Considered)		Variation
Plan implementation approach (<i>Ad-hoc</i> – Project-based)		Variation
Plan Implementation rate (Slow – Rapid)		Variation
Strategy to Project Ratio (One – Many)		Variation
Unplanned Implementations (Allowed – Managed)		Variation
Implementation activities (Limited - Broad)	Broad	
Implementation monitoring (None - Continuous)	Continuous	
Implementation need (Not realised – Recognised)	Recognised	
Implementation timing (Sequential – Parallel)	Variation	
Implementation difficulties (Minor – Major)	Minor	Major

ii IS Plan Implementation Effects

There are 2 espoused propositions, with the only one in use related to the fact that evaluation criteria for assessing outcomes are defined in project plans. The espoused points to 2 possible outcomes arising from implementation – project abandonment or positive results, when business needs are the driver (Table 5.22b).

Table 5.22b: IS Plan Implementation Category – Proposition Comparison

	Espoused	In Use
Monitoring of IS plan implementation to ensure initiatives align with business strategy may result in the decision to abandon projects [Outcomes] [2.3].	X	
Implementation of IS plans that are driven by business needs should yield positive outcomes [2.3.]	X	
Evaluation criteria for assessing outcomes are typically defined in project plans [implementation issue] [6.23].		X
TOTAL	2	1

5.5.10 Alignment and its Effects

i Alignment Category

The alignment category was more dense in the espoused view (4 concepts), as compared to the in use view (2 concepts) (Table 5.23a).

Table 5.23a: Alignment Category – Concept Comparison

Concepts	Aggregate Espoused	Aggregate In Use
Strategic Alignment (Poor – Well-aligned)	Well-aligned	Variation
IS-Business Fit (Misfit – Good fit)	Good fit	Variation
IS-Business Understanding (Divergent – Mutual)	Mutual	
Structural Alignment (Poor – Good)	Good	

ii Alignment - Effects

The three relationships espoused show that the different dimensions of alignment are expected to have positive effects on the organisation. That no relationships were uncovered in use, points possibly to the widely held assumption that alignment is the ultimate outcome of SISP. Thus in use, the effects of alignment are taken as given – i.e., an improvement in organisation performance (Table 5.23b).

Table 5.23b: Alignment Category – Proposition Comparison

	Espoused	In Use
Mutual understanding between business and IS [social <u>alignment</u>] has positive effects [<u>outcomes</u>] [6.7].	X	
IT initiatives aligned to business strategy [<u>alignment</u>] should have positive effects [<u>outcomes</u>] [2.1].	X	
IT Departments aligned to business strategy [<u>alignment</u>] should have positive effects [<u>outcomes</u>] [2.1].	X	
TOTAL	3	0

5.5.11 SISP Outcomes and their Effects

i SISP Outcomes Category

There were 5 concepts extracted from the espoused view versus 6 from the in use perspective. Interestingly, there was very little overlap of concepts mentioned in both views, save for the nature of evaluation criteria (Formal versus Informal). Espoused concepts were more general (e.g., SISP Benefits), whereas in use concepts were more specific (e.g. degree of difficulty experienced with evaluation of outcomes), reflecting the nature of the in use versus the espoused perspectives (Table 5.24a).

Table 5.24a: SISP Outcomes Category – Concept Comparison

Concepts	Aggregate Espoused	Aggregate In Use
Evaluation efficacy (Difficult – Mastered)		Variation
Evaluation focus (Budget – Multiple Criteria)		Variation
Evaluation scope (Outcomes – Process and Outcomes)		Variation
Implementation performance (Budget – Multiple)		Variation
IT value measurement (Intangible – Tangible)		Variation
SISP Benefits (None – Many)	Many	
Consequence of non-alignment (Minimal – Costly)	Costly	
Competitive Advantage through IT (Short-term – Sustainable)	Sustainable	
IS Impact (Low Impact – High Value)	High Value	
Evaluation criteria (Informal – Formal)	Formal	Variation

ii SISP Outcomes – Effects

From both espoused and in use theories, the primary impacts of SISP are in terms of organisational performance improvements and IS function improvements. Thus, although the SISP process is carried out for various reasons (e.g. to generate a plan, to satisfy organisational requirements, to gain support for IT implementation), ultimately

all these efforts are expected to have an impact on the organisation and IS function (Table 5.24b).

Table 5.24b: SISP Outcomes Category – Proposition Comparison

	Espoused	In Use
Outcomes of SISP should lead to organisational performance improvement through IT adding value in the organisation [2.7].	X	
Outcomes of SISP should lead to IS Function performance improvements [2.7].	X	
Positive outcomes from SISP result in improvements in organisational performance [5.13, 6.23].		X
Positive outcomes from SISP result in improvements in IS Function performance [6.23].		X
TOTAL	2	2

iii Summary of findings

More often than not it has been found that theory in use is:

- More detailed in explanation than the espoused theory;
- More specific with reference to concepts than the espoused theory
- Cautionary, pointing to where espoused views may have to be considered carefully in practice (e.g., concerning organisational procedures, it is cautioned that not following them may impact negatively on plan implementation – Table 5.16b);
- In some instances congruent with the espoused theory, confirming or justifying an espoused view.

5.5.12 Overall Comparison

Table 5.25 below summarises the differences between the elements that make up the espoused and in use theories. The first two columns compare conceptual densities, the next two the number of propositions arising from categories (with the number of categories impacted in brackets), and finally the number of times a category is

impacted in the last two columns (in brackets the number of source categories from which the impacts arise).

Table 5.25: Overall Comparison of Espoused Theory and Theory in Use

Category	Espoused Concepts	In Use Concepts	Espoused Impacts	In Use Impacts	Espoused Impacted	In Use Impacted
External Environment	5	6	5 (2)	7 (4)	0 (0)	0 (0)
Organisational Context	5	13	6 (3)	22 (6)	1 (1)	2 (2)
IS Function	8	12	5 (2)	7 (3)	2 (2)	3 (3)
Business Planning System	4	5	5 (3)	8 (4)	1 (1)	1 (1)
SISP Process	21	16	12 (6)	13 (5)	19 (6)	30 (5)
IS Plans & Strategies	4	5	2 (2)	4 (1)	4 (3)	7 (3)
Stakeholder Profile	9	14	9 (4)	14 (6)	2 (2)	5 (4)
Management & Mindset	2	4	1 (1)	3 (3)	1 (1)	2 (2)
IS Plan Implementation	5	8	2 (2)	1 (1)	4 (4)	14 (5)
Alignment	4	2	3 (1)	0 (0)	7 (2)	5 (4)
SISP Outcomes	5	6	2 (2)	2 (2)	10 (5)	12 (6)

i Conceptual density of Categories

Within both the espoused theory and theory in use respectively the SISP Process category was the densest, outlining the centrality of process to SISP. This was more apparent in the espoused theory, as with the theory in use the stakeholder profile, and organisational context were almost as conceptually dense as the process. The theory in use is more grounded in the realities of daily organisational life and so we see greater recognition of the organisational context and the constraints and opportunities it provides, as well as the recognition of stakeholders as the key agents who use and apply IS on a daily basis. The theory in use therefore confirms SISP as a complex social and organisational phenomena, not easily amenable to automation.

In all cases except two, the number of concepts per category in the theory in use exceeded the equivalent number in the espoused theory. This is further confirmation that the theory-in-use more richly describes SISP. The two exceptions were the SISP Process and Alignment categories, which were more richly described by the espoused theory. It is easier to define prescriptions, techniques, methods and activities from an espoused perspective, which maybe explains its greater conceptual density in the espoused theory. Alignment too is more often an espoused ideal that is difficult to operationalise thus the greater attention given it in the espoused theory.

The starkest difference across theories is with the organisational context, which was more richly described in the theory in use. The reason for this is that the organisational context is considered in greater detail when describing practices, rather than when espousing ideals - thus its greater density in the theory in use.

ii Propositions arising from Categories

Concerning the impacts of categories on other categories, in the theory-in-use there are generally more causal conditions emanating from categories than with the espoused theory. The key exception is the Alignment category. Impacts of Alignment are recognised explicitly in the espoused theory, but not in the theory in use. This may point to the fact that Alignment is seen as an end in itself, and so in practice there is no explicit consideration of what impacts it is supposed to have - just a focus on striving to achieve this ideal.

The starkest contrast in terms of the number of propositions emanating from a category is once again with the Organisational context category, whose impacts are explained in more detail in the theory-in-use. This stands to reason, given that espoused ideals sometimes ignore the organisational realities and constraints that accompany everyday activities. There is also a stark contrast with the influence of stakeholder profile, which is taken cognisance of in greater detail in the theory-in-use.

iii Categories Impacted

From the perspective of how categories are impacted by other categories, in both theories the SISP process is impacted the most, with Outcomes also featuring prominently. Given the centrality of the SISP process, this is as expected. Given also that Outcomes represent the ultimate consequences of SISP activities, this is also as expected.

The starkest contrasts between espoused and in use theories relate to the SISP Process and IS Plan Implementation categories where many more impacts on these are delineated in the theory in use than the espoused. Thus a richer explanation of the inhibitors and enablers of the SISP process and plan implementation are provided by the theory in use. Furthermore, espoused theory tends to focus on process only, whilst the theory in use recognises the strong link between formulation and implementation.

iv Matrix Comparison

In Table 5.26, the matrices illustrating the espoused theory and theory in use are compared, where the first number in a cell refers to the espoused theory, and the second to theory in use. The external environment in the theory in use has a broader range of influence where as in the espoused theory its impact is confined mainly to the process. The same trend is again apparent with the organisational context and management mindset.

Table 5.26: Matrix Comparison of Espoused Theory and Theory in Use

	Ext	Org	IS	BPS	Proc	Mgt	Stake	Plan	Imp	Align	Out
Ext	-	-1	-1		4-4	-1					1-
Org		-	-1		4-12		-2	1-3	1-2		-2
IS			-	1-1	4-5						-1
BPS			1-	-	3-5		1-1			-1	-1
Proc					-	1-	1-1	1-2	1-3	5-2	3-5
Mgt					1-	-	-1		-1	-1	
Stake					3-4	-1	-	2-2	1-4	2-1	-2
Plan								-	1-4		1-
Imp									-		2-1
Align										-	3-
Out		1-1	1-1								-

v Overall Findings

The overall picture that emerges from this analysis is that at a high-level, espoused theory and theory in use appear congruent. The same set of categories have emerged, and relationships between them are similar. The goals and objectives for SISP are also compatible across both theories, and elements of rationality and adaptation are evident in both. More detailed analysis has revealed, however, some subtle but important differences. These relate more to the emphasis and importance of key categories.

The espoused theory tends to emphasise the SISP process, and its influence on the expected ultimate outcome - Alignment. Organisational contextual factors, implications of various contextual factors on plan implementation, and the roles, characteristics and effects of the stakeholder profile in SISP, while recognised as important, are given less attention than in the theory-in-use. The espoused theory story line clearly conveys this message. As such, it is very much aligned with the conventional wisdom related to SISP (Lederer & Salmela 1996, Segars & Grover 1999). It may be limited in the sense that it appears too clinical and sanitised to reflect the complexities of SISP in large complex organisations.

The theory-in-use on the other hand provides a richer description of the core categories that make up the theory, and also recognises the centrality of the SISP process. In addition, implementation is addressed almost as a continuation of formulation activity. There is strong recognition of the organisational context and how that plays a part in shaping the characteristics and activities that take place when formulating and implementing strategy. Stakeholders are recognised as playing a central role in SISP. The strongly organisational and social nature of SISP is therefore brought to the fore in the theory-in-use.

A sense of the complexity of SISP arises from a consideration of the theory in use story line. Contextual factors push organisations towards adopting a more deliberate formal, rational and top-down approach to SISP, whilst at the same time pulling them towards a more emergent, incremental, adaptive and bottom-up approach. In this *milieu*, organisations must find a middle ground that allows them to steer a path towards improved SISP.

Lacking in theory in use is a more detailed consideration of how alignment links back to the other categories. In SISP review sessions, the primary focus is on monitoring projects to ensure conformance to schedule, budget and specification. In some instances a decision such as whether to abandon a project or not may be taken, if it is no longer aligning with business strategy, but primarily the focus is on achieving the elusive alignment goal. It is explicit in the espoused theory that alignment should then lead to outcomes that will in turn have positive impacts on the organisation and IS function performance, but is only tacit in the theory in use. This adds weight to the assertion that in practice SISP may be seen as the pursuit of an alignment end. This mirrors the typical goal-seeking strategy of traditional planning.

In retrospect, therefore, from an organisational leaning perspective, single loop learning is apparent in both theories. However, rationality, which is a key principle of single loop learning, is tempered with a need for adaptation due to the dynamic environment. Top-down control is also balanced with broad stakeholder consultation and involvement. SISP approaches are recognized as needing flexibility to fit with the organisational culture, norms and procedures. Thus, characteristics of double loop

learning are apparent. Double loop learning is characterised by the questioning of assumptions. Certain assumptions, however, remain unquestioned. For example, a clear business strategy is seen as necessary for SISP; alignment is taken as the key goal; competitive advantage through IT is an objective of SISP; and organisational culture, norms and procedures are viewed almost as cast in stone, to which SISP approaches must conform. These give an indication that there is room for further improvements in espoused theory and theory in use.

v. (a) Summary of Differences

In comparing the theories, the espoused theory, which represents the belief as to how SISP should be carried out, has a strong emphasis on the process, and how to achieve alignment. It is these espoused beliefs and assumptions that then inform what actions to be taken to improve the situation. As a consequence, new methods, tools and techniques for SISP are continually churned out in pursuit of the alignment goal, without making a substantial impact on improved SISP performance. Other categories that make up the theory, and may hold the key to unlocking improvements, whilst recognised as important, are not as central. The advantage of espoused theory, however, is that to a certain extent it remains unencumbered by the detail and cacophony of every day organisational life, and as such allows for a more visionary, ideal theory to be developed. This may then be its potential usefulness, as noted by Senge (1990).

The theory in use, on the other hand, derived from *ex post facto* reflection on practice, suggests that whilst the process category is core, the organisational context and stakeholder profile, and how these shape and influence formulation and implementation of IS strategy, should also be more closely examined in a bid to improve SISP. Further improvement may also be achieved by recognising the central role of stakeholders, given the organisational and social nature of SISP (Lamprecht, 1997). The disadvantage of theory in use is that there is a tendency to focus on the complexities of organisational detail, and the constraints to planning. It is thus not sufficiently abstract to allow for more high-level conceptualisation of the SISP activity.

5.6 Comparing Conceptual Theory, Espoused Theory and Theory in Use

In total there were 83 concepts identified in the conceptual theory, 72 in the espoused theory, and 92 in the theory in use. Concerning propositions, there were 80 in the conceptual theory, 51 in the espoused theory and 81 in the theory in use. In all, therefore, the theory in use was slightly richer than the conceptual theory, these both being richer than the espoused theory.

5.6.1 Categories

The names of categories and concepts derived through literature were not always identical to the names given in the espoused theory and theory in use. Nevertheless, similarity in meaning could be established, and the same core set of categories was identified across all three theoretical perspectives. This was as expected, given that with well-researched areas no new categories and propositions may emerge through grounded theory analysis, but rather a richer understanding of the phenomenon (Glaser, 1992). The conceptual theory was slightly more parsimonious in that the IS Plan sub category was subsumed under the Outcomes main category, and was referred to under pre-implementation outcomes in the illustration of the conceptual theory in Figure 5.1. There was, however, variation across theories with regards to the number of concepts per category, the naming of these concepts, and in some cases their assignment to categories. In this section, concepts are compared, as to their presence in the three theoretical perspectives.

In the tables below, the bracketed items in each column refer to concepts that were identifiable in the data, but were not explicitly defined as concepts in the corresponding theory. They may have been trimmed away as excess during the process of selective coding, or subsumed into higher order concepts.

i Business Planning System

Table 5.27: Business Planning System Category – Concept Comparison

Concept	Literature	In Use	Espoused
Business Strategy Clarity	X	X	X
Business Planning Level	X	X	X
BP-ISP Integration	(X)	X	X
IT involvement in Business Planning	(X)	X	X
Business Planning Cycle	X	(X)	
Organisational Profit Focus	(X)	X	
Business Planning System Quality	X		
Business Planning Horizon	X		
Business Plan Status	X		

The greatest number of concepts is found in the conceptual theory. Taking into account implicit references to concepts as well as explicit, it subsumes all the concepts identified from espoused and in use views. Those not explicitly mentioned under this category in the conceptual theory were BP-ISP Integration, IT involvement in business planning, and organisational profit focus. The BP-ISP integration factor was, however, included as a concept characterising the SISP Process, whilst the IT involvement in business planning was considered as part of the IS function category. Thus, grouping of concepts into categories differed slightly between the theories, a reflection of the fact that certain concepts straddle the boundaries of categories, in effect indicating relationships between categories.

ii External Environment

Table 5.28: External Environment Category – Concept Comparison

Concept	Literature	In Use	Espoused
Environmental dynamism	X	X	X
Environmental hostility	X	X	X
IT Dynamism	(X)	X	X
IT Munificence	(X)	X	X
IT Skills Shortage	(X)	X	
IT Activity Intensity	X		
External links	X		
Heterogeneity	X		
IT Hype		X	
Impact of Environmental Trends			X

Only two concepts (environmental dynamism, and hostility) were explicitly referred to in all three theories. The espoused and in use theories emphasised the external IT environment to a greater extent than the conceptual theory. This may be due to a greater level of abstraction and generalisation in formulating the conceptual theory, rather than their absence from the literature. In fact labels for the concepts IT dynamism, and IT munificence were derived from the literature (Ranganathan & Sethi, 2000). IT hype was explicitly recognised in the theory in use only. Some mention is made of it in the literature too (Galliers & Baker, 1995). The espoused theory alludes to this concept through its reference to the impact of environmental trends (*e.g.*, outsourcing). The role and impact of IT hype on SISP perhaps deserves greater research attention, as there is evidence from the interview data that IT credibility has been damaged by the frenzy created around Y2K, dot com failures and ERP systems. Indeed it is partly the reason why Carr's (2003) polemic on "*IT doesn't matter*" has been enthusiastically embraced by many CEOs (De Jarnett *et al.*, 2004). Convincing top management of the strategic potential of IS is a key issue for IS managers now more than ever before, but on the other hand, perhaps it always has been (Lederer & Mendelow, 1988).

iii Organisational Context

Table 5.29: Organisational Context Category – Concept Comparison

Concept	Literature	In Use	Espoused
Organisation Culture	X	X	X
Organisational Dynamism	X	X	X
Organisation Norms & Procedures	X	X	X
Organisation Size	X	X	X
IT Budgetary Allocation	(X)	X	X
Organisation Structure	X	X	
Organisational Changeability	X	X	
Power/Political Behaviour	X	X	
Geographic Dispersion	X	(X)	
Organisation Type	(X)	X	
Organisational Core Function	(X)	X	
Organisational Homogeneity	(X)	X	
IT Budget Restrictions		X	
Organisation Growth		X	

The organisational context is most richly described by the theory in use, followed by the conceptual theory. Most of the additional concepts present in the theory in use but which were not made explicit in the conceptual theory had been to some extent mentioned in the literature (*e.g.*, Organisation Type, Homogeneity, IT budgets), and so were not entirely new. The effect of IT budget restrictions and that of organisational growth on SISP had not received much research attention however. The importance of IT budget restrictions in the theory in use points to the more recent concerns of IS executives in the post Y2K era, where many organisations have slashed their IT budgets after overspending in the late 1990s leading up to 2000 (Manyika & Nevens, 2002).

iv IS Function

Table 5.30: IS Function Category – Concept Comparison

Concept	Literature	In Use	Espoused
CIO level	X	X	X
IS Role	X	X	X
IS Formalisation	X	X	X
IS Competence	X	X	X
IT Investment	(X)	X	X
IS Function Standards	(X)	X	X
IS Function Structure	X	X	
IS Maturity	X	(X)	
IS Size	X	(X)	
IT Involvement in Business Planning	X	(X)	(X)
Past IT Success	X	(X)	
IS Complexity	(X)	X	
IT Appropriateness	(X)		X
IS Research & Development Unit		X	X
IS Function Location		X	
IT Management Uniqueness		X	

As with the organisational context, the greatest density of IS function concepts is within the theory in use, followed by the conceptual theory. Several concepts identified in the theory in use were not given much attention in the literature, these being IS research and development, IS function location and IT management uniqueness respectively. Concerning an IS research and development unit, Benamati & Lederer (2001) do, however, make mention of an emerging technologies group, which may be the equivalent of this unit. The importance of the IS function location (i.e., internal or outsourced) in the theory in use, and its apparent lack of attention in the literature on SISF is a reflection of the more recent trend towards outsourcing, which has gained prominence in the light of concerns over returns from IT investment (Manyika & Nevens, 2002). The question of whether IT management is unique or

different from any other function is again a reflection of the recent focus on governance, IT governance also having coming under the spotlight (KPMG, 2004).

v **SISP Process**

Table 5.31: SISP Process Category – Concept Comparison

Concept	Literature	In Use	Espoused
BP-ISP Integration	X	X	X
SISP Activity Set	X	X	X
SISP Adaptation	X	X	X
SISP Alacrity	X	X	X
SISP Feedback	X	X	X
SISP Review	X	X	X
SISP Methodological Approach	X	X	X
SISP Approach	(X)	(X)	X
SISP Rational-Adaptation	X	(X)	(X)
SISP Rationality	X	(X)	(X)
SISP Comprehensiveness	(X)	X	X
SISP Formalisation	(X)	X	X
SISP Flow	(X)	(X)	X
SISP Focus	(X)	X	X
SISP Frequency	(X)	X	X
SISP Horizon	(X)	X	X
SISP Level	(X)	X	X
SISP Flexibility	(X)	(X)	X
SISP Opportunity Identification	(X)	(X)	X
SISP Prioritisation	(X)	(X)	X
SISP Environmental fit	X	(X)	X
SISP Methodology Selection Criteria	X	X	
SISP Evaluation mechanisms	X	(X)	
SISP Methodology Change	(X)	X	
SISP Goal Clarity	X		
SISP Research & Development		X	X

The density of concepts in both espoused theory and theory in use exceeded that of the conceptual theory. The major reason, however, was the higher level of abstraction in the conceptual theory. For example, the SISP rationality concept subsumes comprehensiveness, formalisation, flow and focus (Segars *et al.*, 1998). In the espoused and in use theories, however, these are listed as discrete concepts. As a result, most of the concepts are recognised implicitly or explicitly in all three theories. Notable exceptions are SISP goal clarity, and SISP research and development. The SISP goal clarity is mentioned as an issue in the conceptual theory, but does not stand out in either espoused theory or theory in use, where goals for SISP are assumed to be clear. SISP research and development, on the other hand is listed under espoused theory and theory in use, but not conceptual theory. Considering research and development activities as part of SISP corresponds with the organisational learning approach to SISP, where experiential learning, trial and error and innovation are key characteristics (Huysman *et al.*, 1994).

vi **Stakeholder Profile**

Table 5.32: Stakeholder Profile Category – Concept Comparison

Concept	Literature	In Use	Espoused
Stakeholder Involvement	X	X	X
SISP Champion	X	(X)	(X)
Planner Training	(X)	X	X
Sense of Ownership	(X)	X	X
Stakeholder Communication	(X)	X	X
Stakeholder Competence	(X)	X	X
Consultant Influence	X	X	
Stakeholder Skill	X	X	
Stakeholder Consultation	(X)	X	
Stakeholder Credibility	(X)	X	
Stakeholder Involvement Technique	(X)	X	
Stakeholder Profile	(X)	X	
Stakeholder Cohesion	X		X
Representativeness - Horizontal	X	(X)	
Representativeness - Vertical	X	(X)	
Stakeholder Role Definition	X		
Shared Domain Knowledge	X	(X)	
Stakeholder Attitude	X	(X)	
Stakeholder Commitment	X	(X)	
Stakeholder Satisfaction	(X)	X	
Stakeholder Support	(X)	X	
Top Management Involvement	(X)	X	
Participation Rationale	(X)		X
SISP Control	(X)		X

The Stakeholder Profile shows some interesting contrasts between theoretical perspectives. The only concept explicitly mentioned in all three categories is the stakeholder involvement. Several other concepts listed in the espoused and in use theory are nevertheless implicitly contained in the conceptual theory (*e.g.*, stakeholder communication and sense of ownership). That they are not explicit is probably due to

higher levels of abstraction, whereby stakeholder involvement is taken as subsuming these other concepts. Several concepts are listed in the conceptual theory, but not in the espoused or in use theories (e.g., stakeholder representativeness, role definition). Role definition specifically appears not to have received much attention in the espoused and in use theories. This relates to the clarification of roles amongst the various stakeholder groups – top management, user representatives and their management, IS planners, and possibly external consultants.

vii Management and Mindset

Table 5.33: Management & Mindset Category – Concept Comparison

Concept	Literature	In Use	Espoused
Management Attitude towards IT	X	X	
Management Support for IT initiatives	X	X	
Management Availability	X	(X)	
Management Commitment	X		
Management Expectations	X		
Management Foresight	X	(X)	
Management Involvement	X	(X)	
CEO-CIO Relationship	(X)	X	
Managerial Influence	(X)	X	
Management Appreciation of IT	(X)		X
Management Strategic Focus	(X)	(X)	X

Within this category there were no concepts that were explicit across all three theoretical perspectives. The conceptual theory had the most concepts, and also implicitly made reference to the remainder.

viii **IS Plans and Strategies**

Table 5.34: IS Plans & Strategies Category – Concept Comparison

Concept	Literature	In Use	Espoused
IS Plan Comprehensiveness	X	X	X
IS Plan Usefulness	X	X	X
IS Plan Flexibility	X	X	
IS Plan Currency	X		
IS Plan Perspective (Management vs. IS)	X	(X)	
IS Plan Documentation	(X)	X	
IS Plan Scope	(X)		X
IT Replacement Strategy		X	X

The IS Plan and Strategy category is well defined across all three theoretical perspectives. The conceptual theory addresses the need for the IS plan to be kept up to date (IS Plan Currency), but this issue was not given much attention in the espoused theory and theory in use. IS plan flexibility, a related concept, was, however, mentioned in the theory in use. On the other hand an IT replacement strategy was conceptualised in the espoused and in use theories, but not in the conceptual theory.

ix IS Plan Implementation

Table 5.35: IS Plan Implementation Category – Concept Comparison

Concept	Literature	In Use	Espoused
Plan Implementation Difficulties	X	X	X
Plan Implementation Rate	X	X	
Unplanned Implementations	X	X	
Implementation Mechanism Quality	X	(X)	
Plan Implementation Extent	X	(X)	
Formulation - Implementation Integration	(X)	X	
Operational Planning	(X)	X	
Plan Implementation Approach	(X)	X	
Plan Implementation Failure	(X)	X	
Plan Implementation Activities	(X)		X
Plan Implementation Monitoring	(X)		X
Plan Implementation Timing	(X)		X
Plan Implementation Justification	(X)		X
Strategy to Project Ratio		X	

This category received the most attention in the theory in use. *Plan implementation difficulties* was the only concept to be mentioned across all 3 theories. The *Strategy to Project ratio* was a concept identified in the theory in use, but not found in the conceptual theory. This related to the fact that for each strategic initiative in the IS plan, usually several associated projects are initiated.

x Alignment

Table 5.36: Alignment Category – Concept Comparison

Concept	Literature	In Use	Espoused
Strategic Alignment	X	X	X
IS-Business Fit	(X)	X	X
Structural Alignment	(X)		X
IS-Business Mutual Understanding	X		X
IS-Business Communications	X	(X)	
IS-Business Conflict	X	(X)	
IS-Business Plan Alignment	X	(X)	
Business – IT Infrastructure Lag	X		
IS-Business Climate	X		
IS-Business Mutual Commitment	X		
IS-Business Shared Views	X		

The strategic alignment concept is the only one noted across all three theoretical perspectives. The conceptual theory most richly describes the alignment category, embracing the social dimension as well as plan level and infrastructure levels. The other theories are sparse in the conceptualisation of Alignment, especially the theory in use. This may be because it is a concept often espoused as the ideal, but difficult to pin down and put into practice.

xi Evaluation & Outcomes

Table 5.37: Evaluation & Outcomes Category – Concept Comparison

Concept	Literature	In Use	Espoused
Evaluation Criteria	(X)	X	X
Implementation Performance	(X)	X	
IT Value Measurement	(X)	X	
Evaluation Difficulty	(X)	X	
Competitive Advantage through IT	(X)		X
SISP Benefits	(X)		X
IS Performance	X		X
Capability Improvement	X		
IS Contribution to Organisation Performance	X	(X)	
SISP Effectiveness	X		
Stakeholder Satisfaction	X	(X)	
Evaluation Focus		X	
Evaluation Scope		X	
Unintended Consequences of Non-Alignment			X

There was not much overlap between concepts in the three alternative theories. The conceptual theory focused mainly on outcomes, with the evaluation of these being subsumed as an activity under the Process category. The theory in use focused more on evaluation process, defining concepts such as the criteria to be used for evaluation, and difficulty in measuring IT value. The espoused theory included outcomes, such as competitive advantage through IT, SISP benefits, improved IS performance, as well as the unintended consequences that need to be monitored.

xii Key Concepts of Interest

Several key concepts of interest emerged during the analysis. These were typically concepts from the espoused theory and/or theory in use that had no explicit equivalence in the conceptual theory. Since conceptual theory represents academic

literature, these additional concepts may represent a specific contribution to theory in SISP. They will be discussed by examining each category in turn.

xii. (a) Business Planning System

The *Organisational Profit Focus* concept appeared in the theory in use, but not explicitly in the espoused theory or conceptual theory. As noted by a respondent, concerning his experience of SISP in a commercial organisation: “*There was a lot of competition to succeed, and often not competition between divisions, that wasn’t so bad, but it was to succeed*”. This statement conveys the fact that within each division there was a focus on success (making a profit). Thus, it was difficult to get divisions to adopt a shared vision. As the respondent noted, “*you couldn’t get people to look at the big picture, because everyone was looking at their little picture...*”. This impeded SISP for the organisation as a whole.

xii. (b) External Environment

Concerning *IT hype impact*, a concept appearing in the theory in use, a respondent noted that “*...what happened at the year 2000, was a big bluff within the IT industry, and it hurt a lot of companies*”. Whilst the IT industry often welcomes the hype and frenzy created around phenomena such as Y2K, the dot com explosion, BPR and ERP, the negative consequences of failed implementation and huge IT investments with little business benefit have often been to reduce the credibility of the profession. This results in the development of a negative management mindset about IT and whole-hearted embrace of views, such as those espoused by Carr (2003), on “IT doesn’t matter”. As ever before, therefore, CIOs still have to work hard at convincing management of the strategic potential of IS (Lederer & Mendelow, 1989).

xii. (c) Organisational Context

The *IT budgetary allocation* concept appeared in both the espoused theory and the theory in use. In the espoused view it was believed that this concept shaped how SISP would actually be carried out. As stated: “*...if you’re working at [some companies],*

your budget is with the clients, so depending on the budget that the client has got available, it's a different planning phase, than when you've got a central budget available, and you manage on behalf of the clients. So the first thing is to find out and to know where the money is coming from. Otherwise you can't plan". This concept thus has specific relevance due to the outsourcing of IT services. In the in use view, it was stated concerning this concept that: *"... A lot of companies up front tell you what the budget will be. And then you must come back and tell them what can you do with that budget".* Thus, in this case, planning is done with a focus on managing a budget. The alternative approach is to plan first, and then use the plan as a means of getting approval for funding.

Relatedly, the *IT budget restrictions* concept appeared in theory in use. As a respondent noted: *"The budgets in SA are very tight currently. Nobody has got money to throw around. And as I say, lots of companies are still paying for the year 2000 budget".* This concept reflects the consensus in the aftermath of the IT bubble, and the increased concern over the lack of tangible benefits from large IT investments (Manyika & Nevens, 2002). This has had the effect of an increased focus on financial control in SISP, and shorter planning horizons.

xii. (d) IS Function Context

Concerning the concept *IT Management Standards*, it was mentioned by a respondent that *"... in terms of IT, we try to apply ITIL, as a generic standard for IT management".* Another respondent also mentioned COBIT as being used as an IT management tool. Relatedly, it was noted that although there were similarities between managing of the IS function and other functions in an organisation, there were some attributes unique to IS. This led to the identification of the concept *IT Management Uniqueness*. As stated in an interview: *"... And that's where we differ from the other people. We use that ITIL framework..."*.

xii. (e) SISP Process

In the espoused theory was a concept *Research and Development*. This concept emanated from the following statement by a respondent: "... *I think you also need in planning... to look at things like risk, and have some Research & Development...*". This research and development activity, it was believed, helped in planning, in that it enabled the IS department to discuss with clients their problems and requirements. Solutions appropriate to these needs could then developed. This was not always possible with top-down planning processes. As stated in the in use views: "*it [R & D] was one of the things that allowed us to... go with that vision of something that pulls everything together*". It was also noted by another respondent that "*one of the things that's got to continuously happen in your IT organisation is R & D, observation and understanding, how things work, what's there, if they're viable, if there's an opportunity, if there's not. There's always got to be that pot of research, so that when a business opportunity needs something... you don't start researching there, you've already got an inkling of what can be done, and it speeds up the decision making*". Thus, the added advantage is a more alacritous SISP process.

xii. (f) IS Plan Implementation

An interesting concept categorised under the theory in use was the *Strategy to project ratio*. A respondent noted that: "*We've got a definite project planning phase, between what's in the strategy, and how we're going to implement it. Because there's likely to be a one to many relationship between what's in the strategy and what needs to be implemented to achieve the objective*". It was furthermore emphasised: "*That one to many relationship in fact is quite a good way of thinking of it*". This was affirmed by another respondent, who noted: "*In the strategy, there may be several initiatives*". This concept has important implications, in that it affects the rate and extent of strategy implementation. Where there is a large strategy to project ratio, then the rate and extent of implementation will be impacted.

xiii Summary

In all, despite the aggregate number of concepts being greatest for the theory in use, an examination by category shows that the conceptual theory tended to have more concepts per category than either espoused theory or theory in use. The few exceptions (*e.g.* the Process category) were as a result of a higher level of abstraction being used in the conceptual theory. For example, the notion of rationality was taken to include comprehensiveness, flow, focus and formalisation (Segars *et al.*, 1998), whereas these were identified as discrete concepts in the espoused theory and/or theory in use.

Several concepts that straddled the boundaries of categories were grouped differently in the alternative theories. For example, IT involvement in business planning was categorized as being a business planning system issue in the espoused theory and theory in use, but as an IS function issue in the conceptual theory.

Whilst the conceptual theory was derived from research studies published several years ago, the espoused theory and theory in use were more current, being derived from data in the field. This is reflected in the fact that concepts relating to current trends and practices were more prominent in the theories derived from field data than the conceptual theory. For example, due to the Y2K and dot com fallout and the negative impacts of these on IT credibility, restrictive IT budgets and a trend towards outsourcing are common. This is reflected in the espoused and in use theories, but is not so evident in the conceptual theory. Again, IT governance is currently topical (KPMG, 2004), and so is conceptualised under the IT management standards in the espoused and in use theories, but not in the theory derived from literature.

5.6.2 Comparison of Relationships between Categories

The relationships between categories are firstly compared concerning the number of impacts/influences emanating from a category (in brackets are the number of categories impacted), and then the number of times a category is impacted by other categories (in brackets are the number of categories impacting) (Table 5.38).

Table 5.38: Comparison of Relationships between Categories

Category	Conceptual Impacts	In Use Impacts	Espoused Impacts	Conceptual Impacted	In Use Impacted	Espoused Impacted
External Environment	10 (8)	7 (4)	5 (2)	0 (0)	0 (0)	0 (0)
Organisational Context	13 (8)	22 (6)	6 (3)	2 (2)	2 (2)	1 (1)
IS Function	8 (5)	7 (3)	5 (2)	4 (4)	3 (3)	2 (2)
Business Planning System	5 (3)	8 (4)	5 (3)	4 (3)	1 (1)	1 (1)
SISP Process	10 (6)	13 (5)	12 (6)	22 (9)	30 (5)	19 (6)
Stakeholder Profile	8 (5)	14 (6)	9 (4)	11 (8)	5 (4)	2 (2)
Management & Mindset	6 (6)	3 (3)	1 (1)	6 (6)	2 (2)	1(1)
IS Plan Implementation	5 (4)	1 (1)	2 (2)	9 (8)	14 (5)	4 (4)
Alignment	7 (4)	0 (0)	3 (1)	12 (9)	6 (4)	7 (2)
IS Plans & Strategies	-	4 (1)	2 (2)	-	7 (3)	4 (3)
SISP Outcomes	8 (7)	2 (2)	2 (2)	10 (7)	12 (6)	10 (5)

i Category Impacts

In the conceptual theory the impacts of the external environment are broad, affecting not only the SISP Process, but also the organisation and IS function, as well as IS plan implementation, stakeholders and outcomes. The espoused theory and theory in use on the other hand show fewer causal conditions, and are mainly concentrated around the process (see Matrix representation in Table 5.39). The same trend is apparent with the IS Function context. The management mindset, IS plan implementation, alignment and outcomes categories are likewise more prominent and broader in influence in the conceptual theory. In the conceptual theory, alignment and outcomes were conceptualised as pre-implementation outcomes (inclusive of IS plan sub category), and post-implementation outcomes. It is the pre-implementation outcomes that

account for many of the propositions identified in the conceptual theory, but not in the other theories.

The impacts of the organisational context and business planning systems categories are more apparent in the theory in use although their impacts are centred mainly on the process category. The process and stakeholder categories also appear more influential in the theory in use. The process predominantly influences alignment in the espoused and conceptual theory, whilst in the theory in use other outcomes apart from alignment feature strongly. With the stakeholder profile, in both the espoused and conceptual theories, the main influences are on the process, whereas with the theory in use, the effects of stakeholder profile on implementation is given equal attention.

ii Categories Impacted

The categories impacted columns in Table 5.38 generally show that across the 3 theories, the contextual factors of external environment, organisational context, IS function context and business planning system are the least impacted, whilst the process category as the core receives the most impacts. In the theory in use, the implementation category is impacted to the largest extent as compared to the other theories, whilst the stakeholder profile is most prominent in the conceptual theory. Finally the outcomes and alignment categories are impacted to quite a large degree across all three theories. Given that they represent the outcomes of SISP, this is as expected.

iii Matrix Comparison

In all three theories, the relationships have been examined in the form of a matrix. Combining the three together into one matrix allows for easy identification of commonalities and differences. In Table 5.39 below, it can be seen that relationships emanating or terminating with the process are most common, as well as the relationships emanating from the stakeholder profile. The outcomes of SISP have an

impact on both organisational performance and IS function performance in all theories.

It is also noticeable that a large number of relationships in the conceptual theory are not explicitly mentioned in the espoused theory and theory in use. Part of this is due to the encapsulation of the IS Plan category in the Outcomes in the conceptual theory, but there may also be areas that have been given inadequate attention in practice. On the other side of the coin there are some relationships noted in the espoused theory and theory in use not present in the conceptual theory. These may represent areas for future research. The particular pairs of categories are as follows:

- External Environment to Management Mindset about IT
- IS Function Context to Business Planning System
- IS Function Context to SISP Outcomes
- Business Planning System to IS Function Context
- Business Planning System to SISP Outcomes
- SISP Process to Management Mindset about IT

The lack of conceptual theory relationships emanating from or terminating on the plan category is due to the fact that this category was subsumed under the outcomes category. It does not therefore mean that no such relationships are present in the conceptual theory.

Table 5.39: Matrix Comparison of Theories

	Ext	Org	IS	BPS	Proc	Mgt	Stake	Plan	Imp	Align	Out
Ext	-	I-C	I-C	C	<i>E-I-C</i>	I	C		C	C	E-C
Org		-	I-C	C	<i>E-I-C</i>	C	I-C	E-I	<i>E-I-C</i>	C	I-C
IS			-	E-I	<i>E-I-C</i>	C	C			C	I
BPS			E	-	<i>E-I-C</i>		<i>E-I-C</i>			I-C	I
Proc			C		C	E	<i>E-I-C</i>	E-I	<i>E-I-C</i>	<i>E-I-C</i>	<i>E-I-C</i>
Mgt			C		E-C	-	I-C		I-C	I-C	C
Stake					<i>E-I-C</i>	I-C	-	E-I	<i>E-I-C</i>	<i>E-I-C</i>	I-C
Plan								-	E-I		E
Imp					C	C			-	C	<i>E-I-C</i>
Align					C		C		C	-	E-C
Out		<i>E-I-C</i>	<i>E-I-C</i>		C	C	C		C	C	-

Key: C- Conceptual Theory; I – Theory in Use; E – Espoused Theory

Chapter 6 Conclusions and Recommendations

6.1	Introduction	279
6.2	Conceptual Theory Development.....	280
6.3	Preliminary Analysis of Interview Data	283
6.3.1	Necessity for SISP	284
6.3.2	Characteristics of SISP	284
6.3.3	SISP Activities.....	288
6.3.4	SISP Evaluation Processes	288
6.3.5	The Nature of and Interaction between Espoused and In Use Views	289
6.3.6	Summary of Comparisons	292
6.4	Espoused Theory Development.....	292
6.5	Theory in Use Development.....	297
6.6	Comparison of Espoused Theory versus Theory in Use	300
6.6.1	Comparison by Category	301
6.6.2	Overall Comparison of Espoused Theory and Theory in Use.....	302
6.7	Comparison of Espoused Theory, Theory in Use and Conceptual Theory	306
6.7.1	Comparisons by Category	306
6.7.2	Comparison of Relationships between Categories	307
6.7.3	Key Contributions to Theory.....	310
6.8	Limitations of the Study and Ideas for Future Research	313
6.8.1	Reticence	313
6.8.2	Deriving Theory in Use	313
6.8.3	Intervening Conditions	314
6.9	Recommendations and Implications for Theory and Practice.....	314
6.9.1	Benefit of Conceptual Theory	314
6.9.2	Benefit of Espoused Theory	315
6.9.3	Benefit of Theory in Use	315
6.9.4	Diagnostic Benefit of Espoused Theory and Theory in Use	315
6.9.5	Single versus Double loop learning.....	317
6.9.6	A Role for Alternative Theoretical Perspectives	319

6.1 Introduction

Strategic information systems planning (SISP) has been defined as the process of identifying a prioritised portfolio of information systems that are effective, efficient and/or strategic in nature, together with the necessary resources (human, financial, and technical), change management strategies and organisational structure necessary to ensure implementation (Baker, 1995). As a result of this broad agenda, and given the highly dynamic and turbulent business environment, fuelled in no small part by IT itself, SISP has become a complex organisational activity fraught with difficulty. This is evidenced by its perennial place as a key issue concerning information systems managers across time and space (Niederman *et al.* 1991, Watson *et al.* 1997, Luftman & McLean 2004, Hart *et al.* 2004).

The objectives of the study were to:

1. Derive from academic literature a theory labelled conceptual theory. The grounded theory methodology was employed as the means to this end.
2. Gather data from IS planners in order to establish their beliefs and opinions about SISP. Using the grounded theory methodology once again a theory of SISP was developed, labelled espoused theory, in accordance with the definition provided for such by Argyris & Schon (1974).
3. Gather data from IS planners with regards to their practices in SISP. This data was gathered simultaneously with the espoused beliefs, but was then extracted to provide data that generated a theory in use, using the grounded theory methodology.
4. To compare espoused theory with theory in use in order to understand how to bridge the gap between the two.
5. To compare espoused theory and theory in use with the conceptual theory derived from literature, and to then draw conclusions.

For each of the objectives the key findings will be summarised.

6.2 Conceptual Theory Development

The outcome from this process was a theory that described and explained SISP through 10 major categories, a total of 80 different causal propositions and 25 intervening conditions. Such a large number of propositions cannot easily be illustrated and so a matrix (see Table 6.1) was used to display the detail of at least the causal relationships between categories, and a table containing details of concepts per category and relationships provided an alternative perspective (see Table 6.2 below). A high-level diagram (see Figure 6.1 below) was used to give an overall impression of the theory.

The matrix illustrates the centrality of the Process (see Proc row and Proc column) as the core category, the External environment (Ext row) and Organisational context (Org row) as the key contextual factors, and Alignment (Align column) as a key outcome. That the planning process is the core category was further confirmed by considering the conceptual density of categories (Table 6.2). In grounded theory, concepts identified from data are labelled and grouped into categories. The process category had the greatest number of concepts, and thus the greatest conceptual density, followed closely by the stakeholder profile. The prominence of the stakeholder profile is also noteworthy, whilst the prominence of the IS function as an intervening condition confirms the role of this function as the facilitator of SISP.

Table 6.1: Matrix Representation of Conceptual Theory

	Ext	Org	IS	BPS	<i>Proc</i>	Mgt	Stake	Plan	Imp	<i>Align</i>	Out	Total
<i>Ext</i>	-	1	1	1	3		1		1	1	1	10
<i>Org</i>		-	1	2	4	1	1		2	1	1	13
IS			-		3	1	2		1	1		8
BPS				-	3		1			1		5
<i>Proc</i>				1	-	1	1		1	4	2	10
Mgt			1		1	-	1		1	1	1	6
Stake					4	1	-		1	1	1	8
Plan								-				
Imp					1	1			-	1	2	5
Align					2		2		1	-	2	7
Out		1	1		1	1	2		1	1	-	8
Total	0	2	4	4	22	6	11	-	9	12	10	80

Table 6.2: Tabular Representation of Conceptual Theory

Category	Concepts	Impacts	Impacted by	Intervening
External Environment	5	10 (8)	0 (0)	3
Organisational Characteristics	8	13 (8)	2 (2)	5
IS Function Characteristics	9	8 (5)	4 (4)	6
Business Planning System	6	5 (3)	4 (3)	0
SISP Process	13	10 (6)	22 (9)	5
IS Plans & Strategies	(5)	-	-	-
Stakeholder Profile	11	8 (5)	11 (8)	4
Management & Mindset	7	6 (6)	6 (6)	2
IS Plan Implementation	5	5 (4)	9 (8)	0
Alignment	9	7 (4)	12 (9)	0
SISP Outcomes	5	8 (7)	10 (7)	0
TOTAL	83	80	80	25

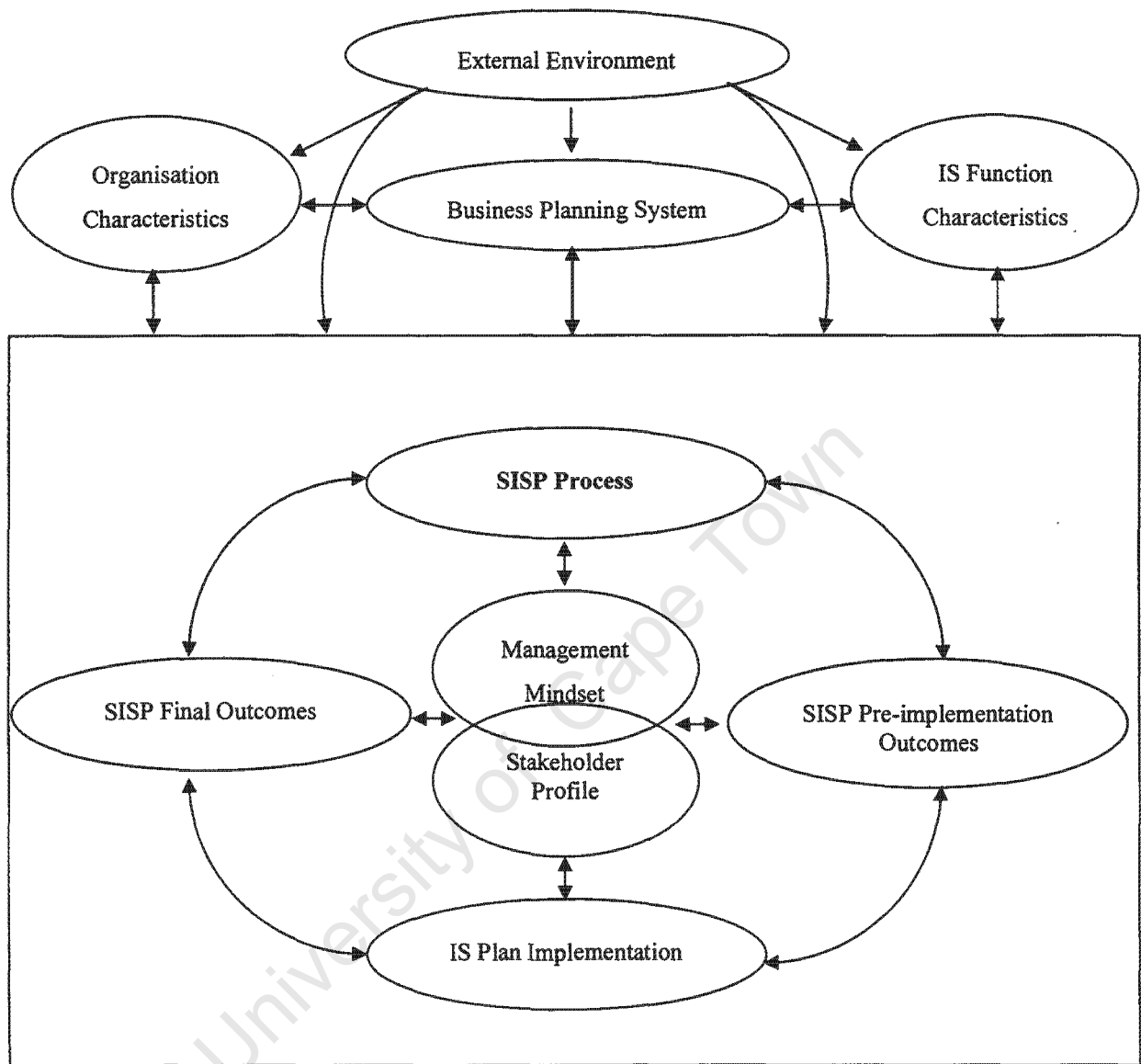


Figure 6.1: Grounded Theory of SISP based on Literature

The above illustration clearly shows the main characteristics of the theory. The contextual factors are shown as being outside the main SISP system, but are interrelated with the various categories within. So, for example, organisational characteristics have an impact on the style of SISP process, and in the reverse direction, outcomes from SISP ultimately have an impact on organisational performance. Within the SISP system, planning is viewed as being cyclical rather than linear (Salmela & Spil, 2002). The planning process results in the production of IS plans (subsumed in pre-implementation outcomes), as well as more intangible factors such as improved stakeholder understanding of IT potential. These feed into the IS

plan implementation process, which ultimately leads to information systems and infrastructure that are designed to align with business strategy. Environmental dynamism causes strategies to move out of alignment, which then triggers another cycle of planning to address the new realities. Taking centre stage are the stakeholders and management who control and drive plan formulation and implementation and monitor outcomes. Not apparent from the diagram, however, are the characteristics of the categories. For example, the planning process possesses characteristics of rationality and adaptation, dependent on the various contextual factors, as well as stakeholders and management.

The theory explicated above integrates the major research findings around SISP as espoused in the mainstream academic literature. It bears some resemblance to the Lederer & Salmela (1996) framework and its extensions (See Figure 3.10), but is cyclically represented (Salmela & Spil, 2002). It is much richer in the description of relationships, and does not assume that all relationships represent causality (cause and effect). Rather, as pointed out by Strauss & Corbin (1998), in grounded theory analysis the concern is not so much with causality, but with various conditions and how they interact to create events that lead to actions.

The predominant drivers in SISP are the human agents, thus the management and stakeholder categories are centrally located in the theory. This recognition of the human agents as the predominant drivers is not surprising, given the qualitative and interpretive nature of the grounded theory approach, but we believe it to be an important distinction from previous work. To accord human agents the subservient roles of inputs (Baker, 1995) or resources (Lederer & Salmela 1996) to processes having an existence of their own disregards the very fabric of the human nature of all activities related to SISP.

6.3 Preliminary Analysis of Interview Data

In the preliminary analysis, each interview was analysed by identifying all espoused views first and then all reflections on practice next. The data was then analysed in

terms of key themes that emerged, and comparisons were made between the espoused views and the views on practice. The main themes that were identified were the necessity for SISP, the characteristics of SISP, activities for SISP, and evaluation of SISP. Findings on each theme will be discussed and compared in turn.

6.3.1 Necessity for SISP

In addition to the espoused SISP goals of aligning IT with business strategy, identifying competitive advantage through IT, establishing technology architectures, and management of the IT budget, several other goals were brought to the fore from reflection on practice (in use views). These included the need to satisfy organisational policy requirements, the need to address implementation issues as part of the SISP process, and the need for consultation, communication and discussion with key stakeholders in order to gain understanding of business needs, negotiate priorities, and gain approval for IS plans. These issues are more attuned with daily organisational routines and activities, thus the reason for them being noted in explanations of practice, but not necessarily in the espoused view. This finding was aligned with that of Heng & Newman (2001) who noted that beyond the goals often espoused in the mainstream literature, SISP may be conceptualised as “*a communicative, sense making and socio-cultural process, highlighting interpretive, communicative, ritualistic and sense making activities*” (p. 2).

6.3.2 Characteristics of SISP

i Business Strategy

The espoused view tended to highlight the need and rationale for clarity in business strategy, whilst the in use view highlighted the lack of clarity and shortcomings of business strategy encountered in practice. The two views thus represented opposite ends of the same continuum, with the ideal at one end and the reality at the other. The pursuit of this ideal may be futile, however, as Hackney *et al.* (2000) contends that

existence of a clear business strategy is an oxymoron, and is confirmed by the reflections on practice in this study.

ii Integration with business planning

The existence of IT-led strategies appeared in the in use view, but not in the espoused. It was noted that these types of strategies had often resulted in excessive IT expenditure, with no corresponding business benefit. The end result was disillusionment with IT, and a negative management mindset about IT. Implementing leading edge IT initiatives had not always brought the anticipated benefits, thus such initiatives were more the exception than the rule. In one organisation it was noted that “... you don’t want to be too ahead or too behind...”, as this would compromise competitive advantage. This interestingly demonstrates that competitive advantage is not necessarily based on leading edge IT-led strategies, but as Hackney *et al.* (2000) point out on the organisational process capabilities enabled by IT.

ii. (a) IT Involvement in Business Planning

The espoused views highlighted the need to involve IS in business strategy planning, whilst in use this did not always happen satisfactorily. Once again, the two views represented opposite ends of the same continuum.

iii Executive Roles in SISP

The espoused view held that the CEO should drive business strategy, and champion IS strategy. In once instance it was noted the CEO in fact did take control of SISP review sessions, even though the CIO was nominally responsible. Thus, even though there appeared to be congruence, in practice there were dynamics at play, which made the reality different. Involvement of the CEO in SISP is often espoused as beneficial in the literature (Lederer & Sethi, 1992). An unintended consequence, however, is that the CEO may attempt to control the SISP process, and in so doing be at odds with the

CIO regarding priorities, and the level of detailed analysis required in review sessions (Hann & Weber, 1996).

It was further espoused that the CIO should report directly to the CEO to have a high level view of the organisation. In practice there were a range of reporting relationships with the CIO at the executive level in some cases, and in other cases at lower levels. The danger of the latter is that IS does not have a clear understanding of where the business is going, resulting in misaligned strategies.

iv Stakeholder Involvement in SISP

In all 7 cases, there was some degree of stakeholder involvement in SISP, which was congruent with the espoused view. In both views, there was also variation in terms of the depth and breadth of involvement. The importance of stakeholder involvement was nevertheless clear.

v Frequency of Planning and Planning Horizon

In the espoused view, the planning horizon varied from 1 to 5 years, and was dependent mainly on the dynamism in the environment. In practice, likewise, planning horizons varied mostly from 1 to 5 years. Shorter horizons were often due to environmental dynamism, as well as in some organisations, reduced IT expenditure due to dissatisfaction with prior strategic IT initiatives. The business planning cycle also impacted the SISP horizon.

The frequency of planning was espoused as needing to be continuous, quarterly, or every 6 months in order to review implementation and test the state of alignment. In use, frequency of planning varied from no reviews to monthly reviews. The latter were often very brief, and focused on project implementation rather than strategic change. In one case, the plan was never discussed again, with only the review of project progress up for discussion. In another instance, it was very difficult to put new issues IT on the agenda, with only a cursory review of project progress being

tolerated. This contrasted markedly with the need for flexibility in process and plans that was espoused.

The differences here highlight the difficulty of putting into practice what is espoused – i.e., a flexible planning process that continually assesses the state of alignment. There was a tendency in practice to see planning as a once off activity that created a plan to guide implementation. Once produced, there was reluctance to deviate from the plan and an emphasis especially from strategic management on monitoring budgets and project implementation schedules, albeit at a very high level. This reluctance to want to change plans may stem from the disruption that is possible when modifying a plan before completion, as it has impacts on the systems currently under development, and may lead possibly to project abandonment at worst. A possible mechanism to deal with this reluctance employed by a few organisations was to emphasise and communicate to stakeholders that nearer to implementation, each project needed to be reassessed, so as to check whether the assumptions upon which it were based still held true (Baker, 1995).

vi Comprehensiveness

There tended to be congruence in terms of comprehensiveness between espoused and in use views. The difference arose with regards to plan review sessions, which according to the espoused view should be detailed. In practice very often these were brief and high level, and lead to possible misalignment of implemented initiatives with a changed business environment. The espoused view cautioned also against being too comprehensive, which leads to a process that is excessively lengthy, an affirmation of Lederer & Sethi's (1992) findings.

vii Implementation Focus

The implementation issues mentioned were closely tied to discussions of comprehensiveness, reviews and evaluation in SISP. This was evidence that a clear division between plan formulation and implementation as conveyed by traditional

conceptualisations of planning may be artificial. Where implementation is outsourced, however, there was a conscious effort at delineating them. In all, the espoused and in use views on implementation focus were more or less congruent. Implementation issues were addressed to a greater extent and breadth in explanations of practice. This seems logical since implementation is closer to the realities of everyday organisational activity than to espoused ideals.

viii Methodological Approach

In several organisations there was generally satisfaction with the methodological approaches being used, and therefore congruence with espoused views. In other cases, there was dissatisfaction, which prompted espoused views at variance with practice.

6.3.3 SISP Activities

In both analyses of espoused and in use views, all the expected phases of a SISP study as outlined by Mentzas (1997) were covered. In use, the strategic awareness phase was not emphasised as much as in the espoused, which points to possibly insufficient analysis of business strategy in practice. This concurs with the findings on business strategy elucidated earlier where in practice there was often a lack of business strategy clarity. Overall, the greater number of activities espoused compared to the number mentioned in use also reflects the greater propensity to list prescriptions of what should be done in the espoused view, whilst in practice the organisational realities and the manner in which activities are performed are not always linear and prescriptive.

6.3.4 SISP Evaluation Processes

The espoused views of evaluation were much more detailed in both scope and depth. This concurs with the previous finding concerning planning review sessions where in practice these were often brief and lacking in detail. Missing from both espoused and in use views was the necessity to evaluate not only the outcomes, but also the process of SISP (Galliers, 1991).

6.3.5 The Nature of and Interaction between Espoused and In Use Views

Comparisons between espoused and in use views took place in two ways. Firstly by interview, and then secondly through a comparison of the aggregate espoused and in use data. The main issues to emerge from these analyses concerning the nature of espoused views and in use views, and their interaction are delineated below.

i Derivation of Views and Opinion

- The espoused view often provides the rationale for what is put into practice.
- Espoused views may emanate from failures and shortcomings experienced in practice (in use views).
- Although in use and espoused views may be congruent initially, unintended consequences in practice may result in the in use views changing, necessitating a rethink of the espoused.
- Where espoused views are derived from failings in practice, there is a tendency to espouse a view at the extreme opposite end of the failed. Implementation of such radical change needs to be viewed with caution, however, due to its possible incompatibility with organisational culture.
- Espoused views may be informed by changes in the external environment, which necessitate a rethink of current practice.
- Espoused views may emerge from innovative practices, which may have been arrived at unintentionally or through experimentation (e.g. Training).
- When well-researched and well thought-out change initiatives inform the espoused view, there is greater likelihood of it being institutionalised in practice.

ii Congruence between Espoused Views and Views on Practice

- An appreciation and understanding of an organisation's culture, norms and procedures leads to greater congruence between espoused and in use views, as over time, espoused views will be developed that when implemented will be accepted in use, resulting in congruence.

- Espoused and in use views may be congruent, but the motive for each may differ.
- Congruence between espoused and in use views may be as a result of the inability to notice weaknesses in current practice.
- Where espoused views have been successfully implemented in practice, this reinforces the belief in the espoused view. There is a danger that this view is so strongly held on to that it will be difficult to change when circumstances require.
- In certain instances there may be congruence between espoused and in use views due to the views espoused by researchers and consultants gradually gaining acceptance and being implemented. Techniques proven to be successful have been widely adopted.
- Espoused views may be congruent with in use views in order to fit with the organisational culture rather than due to any personal or professional conviction of the planner.

iii Gap between Espoused Views and Views on Practice

- Espoused views and in use views often represent opposite ends of a spectrum.
- A gap between espoused and in use views, leads to actions to be taken to reduce the gap. So espoused views inform in use views.
- The widely reported and perceived failure of certain practices, results in their widespread rejection, and thus absence from espoused views.
- Differences in views concerning rationale for SISP represent possible differences in views between the CIO (espoused), and CEO (in use) depending on the degree of control the CEO has. This concurs with the findings of Hann & Weber (1996), who found that where the CEO controls SISP, the CEO's goals are reflected in the plan, whereas if the CIO is in control, the CIO goals are reflected in the plan.
- Where practices in use are difficult to change, due to resistance (*e.g.*, fixed management mindset about IT) then informal mechanisms may be employed to bring the espoused views into use.

- Resistance to change slows down the rate at which espoused views can be instituted into practice.
- Where practices in use are rigid and difficult to change, alternatives in the form of espoused views may not be implementable resulting in an irreconcilable gap between the espoused and in use views.
- Certain espoused views may be difficult to put into practice. The question of “more easily said than done” holds true. For example, the closeness of the implementation to practice makes it difficult for organisations to step back, and review again the plans, which form the basis for implementation. Thus, in use, there was a reluctance to review plans in detail as espoused.
- Espoused views may not easily reflect reality, due to the complexity of real world practice.
- Prescriptions are easier espoused, as in practice activities are not often performed in a linear step-by-step fashion.

iv Conceptual Distance

- Views reflected in use may not be not be espoused due to the greater conceptual distance of the espoused view from practice, and the closer the in use view to the daily lived experiences.
- In use views may be richer in description than espoused due to the conceptual distance of espoused views from practice.

v Other General Observations

- In use practices may be observable to an outsider, but may not be explicitly stated by a respondent. This corresponds with the findings of Argyris & Schon (1974) who note that theory in use is sometimes tacit.
- The iterative learning cycle between espoused and in use views needs to be continually in motion for continuous improvement to take place.

6.3.6 Summary of Comparisons

Preliminary analysis allowed us to become immersed in the data, which aided in grounding the theory in data rather than in speculation or prior understanding and knowledge. The write-up of the preliminary analysis was not completed prior to applying grounded theory methodology, as in developing grounded theories linear processes are not used. Data gathering, preliminary analysis and grounded theory analysis took place in tandem with a constant switching and iteration between phases.

The subtle differences in nature between espoused and views on practice were brought to the fore, with espoused views being more abstract, general and reflective of ideals, and in use views more detailed, extensive and reflective of the “*exigencies of daily lived experiences*” (Strauss & Corbin, 1998). The nature of interaction between the two was also highlighted with a constant interplay and juxtaposition between alternative perspectives very much reflective of cognitive processes that typify the mental maps of the mind (Eden, 1989). This preliminary analysis, it must be emphasised, compared views and perspectives, and not theory, which is a more profound concept, and will be discussed next.

6.4 Espoused Theory Development

Espoused theory was developed from the interview data by examining statements that reflected respondent beliefs of how SISP should be carried out. The coding procedures of the grounded theory method – Open coding, axial coding and selective coding, respectively, were employed in order to identify concepts and categories, label them, identify relationships between categories and then refine the theory. The end result was a theory made up of 72 discrete concepts and grouped into 11 major categories. A total of 51 different causal propositions were identified between categories, but interestingly intervening conditions were not explicitly identified. A cursory analysis revealed that there was some evidence of intervening conditions that became evident when examining causal conditions collectively. For instance, a clear business strategy was seen as necessary for conducting SISP effectively, as was IT involvement in business planning. In effect, then, IT involvement in business planning

also acted as an intervening condition, as such involvement mitigated against the impact of an unclear business strategy on SISP effectiveness. Through this involvement clarity could be established.

The espoused theory was represented firstly in the form of a matrix, and then a table detailing concepts per category, the number of propositions emanating from a category, and the number of propositions impacting on a category. Finally, a story line was developed which described the theory in a coherent manner. The matrix representation (Table 6.3), tabular representation (Table 6.4 below), and key characteristics evident from the story line are illustrated and noted below.

The matrix illustrates the SISP Process as the core category, with the key outcome from this process being Alignment (Align). The contextual factors influencing the SISP process are primarily the external environment, organisational context (Org), IS function context (IS), business planning system (BPS) and stakeholder profile (Stake). It also shows the Stakeholder Profile as having a broad influence on process (Proc), plan content (Plan), implementation (Imp) and alignment (Align), which is expected since it is the stakeholders that drive SISP. The role of the management and their mindset was somewhat subdued.

Table 6.3: Matrix Representation of Espoused Theory

	Ext	Org	IS	BPS	<i>Proc</i>	Mgt	Stake	Plan	Imp	Align	<i>Out</i>	Total
Ext	-				4						1	5
Org		-			4			1	1			6
IS			-	1	4							5
BPS			1	-	3		1					5
<i>Proc</i>					-	1	1	1	1	5	3	12
Mgt					1	-						1
<i>Stake</i>					3		-	2	1	2		8
Plan								-	1		1	2
Imp									-		2	2
Align										-	3	3
Out		1	1								-	2
Total	0	1	2	1	19	1	2	4	4	7	10	51

Table 6.4 shows that the SISP Process has the greatest number of concepts and influences, and is impacted by more causal conditions than any other category. It is thus clearly the central phenomena in the espoused theory. SISP outcomes and alignment are impacted by a large number of causal conditions. These are thus as expected the categories representing the consequences of carrying out SISP.

Table 6.4: Tabular Representation of Espoused Theory

Category	Concepts	Impacts	Impacted by
External Environment	5	5 (2)	0 (0)
Organisational Context	5	6 (3)	1 (1)
IS Function	8	5 (2)	2 (2)
Business Planning System	4	5 (3)	1 (1)
SISP Process	21	12 (6)	19 (6)
IS Plans & Strategies	4	2 (2)	4 (3)
Stakeholder Profile	9	8 (4)	2 (2)
Management & Mindset	2	1 (1)	1(1)
IS Plan Implementation	5	2 (2)	4 (4)
Alignment	4	3 (1)	7 (2)
SISP Outcomes	5	2 (2)	10 (5)
TOTAL	72	51	51

The key features of the espoused theory evident from the story line were:

- An emphasis on a clear business strategy as input into the SISP process;
- An emphasis on integration between business planning and SISP to align strategies and exploit IT opportunities;
- The need for a SISP methodological approach that fits with organisational norms, procedures guidelines and culture;
- The need for a formalised, comprehensive process and plan in SISP to aid in implementation;
- At the same time, the need for flexibility and agility to be built into the process, due to dynamism in the internal and external environments;
- Broad stakeholder involvement and high levels of competence amongst stakeholders;
- Continual review of plans, implementation and outcomes in pursuit of alignment;
- Alignment as the key goal, leading to organisational and IS function performance improvements.

This espoused view of SISP mirrors much of the thinking in the contemporary academic literature on SISP, despite the fact that the respondents indicated that they

do not in general use academic research as a source of information for carrying out SISP. It thus in effect independently validated academic research findings –albeit from the espoused view of IS planners.

From the perspective of organisational learning, the means-end, goal-seeking behaviour of traditional planning is apparent in the dogged pursuit of alignment. This is evidence of single loop learning. Such learning is governed by four principles: (1) Achieve the intended purpose; (2) Maximise winning and minimize losing; (3) Suppress negative feelings; (4) Emphasise rationality (Moffitt & Peppet, 2004). The need for rationality in SISP (formalisation, comprehensiveness, top-down flow, control focus) is tempered by the dual need for adaptation (broad stakeholder profiles, flexibility in planning and plans), however. It can therefore be said to go beyond single loop learning in that respect. The theory in essence reflects effective SISP as the balance between these two sometimes-conflicting prerogatives.

For it to reflect double loop learning, it should hold to 3 principles: (1) Valid information; (2) Free and informed choice; (3) Internal commitment to the choice, and monitoring of implementation (Argyris *et al.* 1985, Moffitt & Peppet 2004). Actions that hold to these principles involve sharing control with competent others rather than trying to unilaterally control events (Argyris *et al.* 1985), balancing advocacy and inquiry to promote collaborative learning (Argyris *et al.* 1985, Senge 1990), and reflecting on values, norms and assumptions that underpin social structures (Greenwood, 1998).

The espoused theory possesses some elements of double loop learning. Valid information is sought through broad stakeholder involvement and consultation, and through this interaction, informed decisions are made. There is close monitoring of implementation, and a questioning of whether implementation should proceed when it becomes evident that an initiated project is no longer aligned with business strategy.

It is recognised that the SISP approach should be made flexible to adapt to the environmental context, but certain assumptions seem to remain embedded, for example, the need for a clear business strategy as the starting point for SISP and

alignment as the end goal. Ciborra & Hanseth (2001) provide evidence that such a model, within the formative context of management as control, leads to drift, whereby environmental change and bottom-up resistance during implementation impede the top-down pursuit of alignment. Furthermore, in this pursuit more complex IT infrastructure is often built which becomes more rigid and inflexible over time, compounding the difficulty of aligning IT to the more fluid and dynamic business strategy (Hackney *et al.*, 2000). Thus, the espoused theories of IS planners could benefit from a consideration of this thinking.

6.5 Theory in Use Development

Theory in use was developed from the interview data by examining statements that reflected respondent reflections on how SISP was carried out according to their past experience. The coding procedures of the grounded theory method – open coding, axial coding and selective coding, respectively, were employed in order to identify concepts and categories, label them, identify relationships between categories and then refine the theory. The end result was a theory made up of 91 discrete concepts and grouped into 11 major categories, identical to the espoused theory. A total of 80 different causal propositions were identified between categories, but intervening conditions were not made explicit. As with the espoused theory, these did not emerge clearly, but through more detailed analysis would have become apparent.

The matrix below (Table 6.5) summarises the relationships between categories by counting the number of propositions linking each pair. A notable feature of the theory apparent from the matrix is the overriding centrality of the process, which is influenced by more factors than any other category (see the Proc column). It takes pride of place therefore as the core category. Notable also is the IS Plan Implementation (Imp) category which is also influenced by a wide array of factors. This demonstrates that SISP is seen as being concerned with both formulation and implementation of plans, and not just the former. The large number of factors influencing the Outcomes (Out) category confirms it as embodying the key consequences of SISP.

The key contextual category is the organisational context (see the Org row), which has more propositions emanating from it than any other category, primarily influencing the process. The impact of the external environment is somewhat less pronounced in comparison. Also worthy of note is the strong presence of stakeholder profile (Stake) as a key influence on the planning process (Proc) and IS plan implementation (Imp). This demonstrates that it is the stakeholders who drive and design the planning process through to implementation and beyond. The role of management and their mindset appears somewhat more subdued in comparison.

Table 6.5: Matrix Representation of Theory in Use

	Ext	Org	IS	BPS	<i>Proc</i>	Mgt	Stake	Plan	<i>Imp</i>	Align	<i>Out</i>	Total
Ext	-	1	1		4	1						7
<i>Org</i>		-	1		12		2	3	2		2	22
IS			-	1	5						1	7
BPS				-	5		1			1	1	8
<i>Proc</i>					-		1	2	3	2	5	13
Mgt						-	1		1	1		3
<i>Stake</i>					4	1	-	2	4	1	2	14
Plan								-	4			4
Imp									-		1	1
Align										-		0
Out		1	1								-	2
Total	0	2	3	1	30	2	5	7	14	5	12	81

In Table 6.6 the categories are compared this time in terms of their density (number of concepts), number of propositions that are emanating from each (number of categories in brackets), as well as in terms of the number of impacts each category receives (number of influencing categories in brackets). The SISP process has the greatest number of concepts, followed by the stakeholder profile and organisational context. The SISP process is impacted by more factors than any other category, with IS Plan implementation also featuring as a key category in this respect. The organisational context impacts categories in more ways than any other, followed by the stakeholder profile. Alignment is seen as an end in itself, as there are no relationships explicitly

identified as arising from it. The SISP outcomes category is impacted by a large number of causal conditions, which confirms it as embodying the main consequences of carrying out SISP. These findings confirm those already noted through the matrix analysis.

Table 6.6: Tabular Representation of Theory in Use

Category	Concepts	Impacts	Impacted by
External Environment	6	7 (4)	0 (0)
Organisational Context	13	22 (6)	2 (2)
IS Function	12	7 (3)	3 (3)
Business Planning System	5	8 (4)	1 (1)
SISP Process	16	13 (5)	30 (5)
IS Plans & Strategies	5	4 (1)	7 (3)
Stakeholder Profile	14	14 (6)	5 (4)
Management & Mindset	4	3 (3)	2 (2)
IS Plan Implementation	8	1 (1)	14 (5)
Alignment	2	0 (0)	5 (4)
SISP Outcomes	6	2 (2)	12 (6)
TOTAL	91	81	81

Key features of the theory in use evident from an examination of the story line include:

- Complexity, due to the large number of interrelated concepts and categories;
- An emphasis on clarity in business strategy as a necessary input to SISP;
- A sense that the planning process and implementation activities are seamlessly integrated activities following on from each other;
- A leading role for stakeholders and management;
- The strong presence of organisation culture, norms and procedures as influences and constraints on SISP process and plan implementation;
- Rationality (comprehensiveness, formalisation, financial control and top-down flow) as key concepts in SISP;
- Dynamism in the environment, which requires greater flexibility and adaptation in the SISP process and plans;
- Alignment as a key outcome

The paradoxical nature of SISP is clearly illustrated in this theory, whereby top-down rational characteristics are at the same time integrated with elements of stakeholder involvement, process and plan flexibility, and seamless integration between plan formulation and implementation. These latter elements are those often espoused by proponents of emergent and incremental rather than rational planning (Huysman *et al.* 1994, Lamprecht & Roode 1999). This theory therefore validates the integrated conceptual theory generated from academic literature, which highlighted the same elements as important concepts and categories in SISP.

Whilst incorporating elements of single loop learning through the pursuit of the alignment goal, it also goes beyond that through a tempering of rationality, in recognition of a dynamic and turbulent business and IT environment that requires a process characterised by adaptation. There are thus elements of double loop learning. This is noted by the emphasis on stakeholder involvement and consultation, and the need for SISP procedures to be adapted to fit environmental realities. However, certain assumptions remain unquestioned such as the need for clarity in business strategy as the point of departure for SISP, and the pursuit of alignment. Furthermore, organisational culture, norms and procedures are as if cast in concrete, with an assumption that SISP must fit and work within these unquestionable constraints. Further improvements to practice may benefit from a closer questioning of these assumptions.

6.6 Comparison of Espoused Theory versus Theory in Use

Espoused theory and theory in use were compared using a number of different techniques. Firstly, for each category the concepts were compared, and then propositions emanating from each category were also compared. Following on from that the overall theoretical elements developed in each case (matrices, tables and story lines) were compared. The findings from each analysis will be summarised below.

6.6.1 Comparison by Category

More often than not it was found that theory in use is:

- More detailed in explanation than the espoused theory, providing the rationale for espoused propositions. For each espoused proposition, very often there were a number of propositions from theory in use in support of and explaining in detail the espoused proposition.
- More specific with reference to concepts. The conceptual density of categories from theory in use was greater than from espoused theory. The concepts themselves had greater specificity in the theory in use.
- Cautionary, noting where an espoused view may have to be considered carefully in practice;
- Congruent in some cases, merely confirming an espoused view.

These findings were validated by those from the preliminary analysis, which analysed data by examining themes and statements, rather than through concepts, categories and propositions.

The real world is a complex interacting flux of events and ideas (Checkland, 1989). Theory in use represented the respondents' explanation of this real world, hence there was a double hermeneutic at play (Lamprecht, 1997), where the planner reflected on practice, and provided an explanation and theory of it. The researcher in turn interpreted the views of the planners in order to generate a theory, defined as theory in use. From a theoretical perspective, it was not the data *per se*, but the categories and concepts abstracted that were of greater importance, however. The theory in use represents substantive theory to a greater extent than espoused theory as it is closer to reality than the espoused, being more grounded in this respect than the espoused.

The espoused theory presents the planners' view of how SISP should be carried out. The explanation of the respondents was once again interpreted by the researcher to generate an espoused theory. This espoused theory is conceptually more distant from the rich flux of real world experience, and so is not as dense or complex as the theory in use. It is, then on a continuum, closer to abstract theory than the theory in use.

The interaction and interplay of the two theories represent a natural psychological cognitive process, as evident when developing cognitive maps about phenomenon (Eden, 1989). Within these cognitive maps are bipolar concepts, which reflect a constant comparative process that takes place in people's minds. When discussing theory of SISP for example, at one pole may be the espoused theory, which is constantly compared with the other pole – theory in use.

6.6.2 Overall Comparison of Espoused Theory and Theory in Use

Table 6.7 below summarises the differences between the elements that make up the espoused and in use theories. The first two columns compare conceptual densities, the next two the number of propositions arising from categories (with the number of categories impacted in brackets), and finally the number of times a category is impacted in the last two columns (in brackets the number of source categories from which the impacts arise).

The overall picture that emerged from this comparison was that at a high-level, espoused theory and theory in use appear congruent. The same set of categories have emerged, and relationships between them are similar. The goals and objectives for SISP are also compatible across both theories, and elements of rationality and adaptation are evident in both theories. More detailed analysis has revealed, however, some subtle but important differences. These relate more to the emphasis and importance of key categories.

Table 6.7: Overall Comparison of Theories

Category	Espoused Concepts	In Use Concepts	Espoused Impacts	In Use Impacts	Espoused Impacted	In Use Impacted
External Environment	5	6	5 (2)	7 (4)	0 (0)	0 (0)
Organisational Context	5	13	6 (3)	22 (6)	1 (1)	2 (2)
IS Function	8	12	5 (2)	7 (3)	2 (2)	3 (3)
Business Planning System	4	5	5 (3)	8 (4)	1 (1)	1 (1)
SISP Process	21	16	12 (6)	13 (5)	19 (6)	30 (5)
IS Plans & Strategies	4	5	2 (2)	4 (1)	4 (3)	7 (3)
Stakeholder Profile	9	14	9 (4)	14 (6)	2 (2)	5 (4)
Management & Mindset	2	4	1 (1)	3 (3)	1 (1)	2 (2)
IS Plan Implementation	5	8	2 (2)	1 (1)	4 (4)	14 (5)
Alignment	4	2	3 (1)	0 (0)	7 (2)	5 (4)
SISP Outcomes	5	6	2 (2)	2 (2)	10 (5)	12 (6)

The espoused theory tended to emphasise the SISP process, and the expected ultimate outcomes - Alignment. Organisational contextual factors, implications of various contextual factors on plan implementation, and the roles, characteristics and effects of the stakeholder profile in SISP, while recognised as important, were given less attention than in the theory-in-use. The espoused theory story line clearly conveyed this message. As such, it was very much aligned with the conventional wisdom related to SISP (Lederer & Salmela 1996, Segars & Grover 1999). The espoused theory may be limited in the sense that it appears too clinical and sanitised to reflect the complexities of SISP in large complex organisations.

Also, since it represents the belief as to how SISP should be carried out it had a strong emphasis on the process, and how to achieve alignment. With this espoused focus, new methods, tools and techniques for SISP are continually churned out in pursuit of

the alignment goal, without making a substantial impact on improved SISP performance. Other categories that make up the theory, and may hold the key to unlocking improvements, whilst recognised as important, are not as central.

Its advantage, however, is that to a certain extent it remains unencumbered by the detail and cacophony of every day organisational life, and as such allows for a more visionary, ideal theory to be developed. This may then be its potential usefulness, as noted by Senge (1990).

The theory-in-use derived from *ex post facto* reflection of practice provided a richer description of the core categories that make up the theory, and also recognised the centrality of the SISP process. In addition, implementation was addressed almost as a continuation of formulation activity. There was strong recognition of the organisational context and how that plays a part in shaping the characteristics and activities that take place when formulating and implementing strategy. Stakeholders were recognised as playing a central role in SISP. The strongly organisational and social nature of SISP was therefore brought to the fore in the theory-in-use, thus validating the re-conceptualisation of SISP as a more socially constituted process (Lamprecht, 1997).

A sense of the complexity of SISP arose from a consideration of the theory in use story line. Contextual factors push organisations towards adopting a more deliberate formal, rational and top-down approach to SISP, whilst at the same time pulling them towards a more emergent, incremental, adaptive and bottom-up approach. In this *milieu*, organisations must find a middle ground that allows them to steer a path towards improved SISP.

Its disadvantage is that there is a tendency to focus on the “here and now” complexities of organisational detail, and the constraints to planning. It is thus not sufficiently abstract to allow for a more high-level conceptualisation of the SISP activity.

Lacking also in the theory in use was a more detailed consideration of how alignment links back to the other categories. In SISP review sessions, the primary focus was on monitoring projects to ensure conformance to schedule, budget and specification. In some instances a decision such as whether to abandon a project or not may have been taken, if it was no longer aligning with business strategy, but primarily the focus was on achieving the elusive alignment goal. It was explicit in the espoused theory that alignment should then lead to outcomes that in turn have positive impacts on the organisation and IS function performance, but was only tacit in the theory in use. This adds weight to the assertion that in practice SISP may be seen as the pursuit of an alignment end. This mirrors the typical goal-seeking strategy of traditional planning. On the other hand, however, alternative objectives for SISP beyond those typically espoused were more apparent in the theory in use.

In retrospect, therefore, from an organisational leaning perspective, single loop learning was apparent in both theories. However, rationality, which is a key principle of single loop learning, was tempered with a need for adaptation due to the dynamic environment, and top-down control was balanced with broad stakeholder consultation and involvement. SISP approaches were recognized as needing to be flexible, to fit with the organisational culture, norms and procedures. Thus, there were also characteristics of double loop learning. Double loop learning is characterised by the questioning of assumptions, but certain assumptions in both theories remained unquestioned. For example, a clear business strategy was seen as necessary for SISP; alignment was taken as the key goal, competitive advantage through IT was an espoused objective, and organisational culture, norms and procedures were viewed almost as cast in stone, to which SISP approaches had to conform.

The process of interplay between the two theories is aptly illustrated by Ciborra (1999) who note that for every action there exists a high-level *in order to* motive, which embodies “*a vision of the act as if already completed*” (p. 144). At the same time, there also exists the *because of* motives, which represent the more detailed past experiences, which are selectively evoked depending on circumstances at the moment of making a decision:

The *in order to* project deals with actor's explicit and conscious meaning in solving a problematic situation, whilst the *because of* motives can explain the reasons why and how a situation has been perceived as problematic in the first place. The asymmetry between the orientation of attention to the past, and to the future intrinsic to any decision or action, has important implications for the study of improvisation. (Ciborra, 1999, p. 144)

The *in-order-to* motives correspond with the espoused theory, and *because-of* motives, with the theory in use. The espoused theory (in order to motives), are still important and relevant, but represent only the tip of the iceberg. Even more relevant is "*the drifting mass at the bottom, which provides the raw materials, the left-overs, out of which plans are made*" (p. 144), i.e., the theory in use. The findings with regard to the nature and interaction of the two theories can therefore be explained by Ciborra's (1999) observations, and possibly points to improvisation as being the means by which the relationship between espoused theory and theory in use in SISP should be examined.

6.7 Comparison of Espoused Theory, Theory in Use and Conceptual Theory

In total there were 83 concepts identified in the conceptual theory, 72 in the espoused theory, and 92 in the theory in use. Concerning propositions, there were 80 in the conceptual theory, 51 in the espoused theory and 81 in the theory in use. In all, therefore, the theory in use was slightly richer than the conceptual theory, these both being richer than the espoused theory. The three alternative theoretical perspectives were compared firstly by category, and then in terms of propositions. Below is a brief summary of findings.

6.7.1 Comparisons by Category

The names of categories and concepts derived through literature were not always identical to the names given in the espoused theory and theory in use. Nevertheless, similarity in meaning could be established, and the same core set of categories was

identified across all three theoretical perspectives. The conceptual theory was a bit more parsimonious in that the IS Plan sub category was subsumed under the Outcomes main category, and was referred to under pre-implementation outcomes in the illustration of the theory in Figure 6.1.

There was variation across theories with regards to the number of concepts per category, the naming of these concepts, and in some cases their assignment to categories. In all, despite the aggregate number of concepts being greatest for the theory in use, an examination by category shows that the conceptual theory tended to have more concepts per category than either espoused theory or theory in use. The few exceptions (*e.g.*, the Process category) were as a result of a higher level of abstraction being used in the conceptual theory. For example, the notion of rationality was taken to include comprehensiveness, flow, focus and formalisation, whereas these were identified as discrete concepts in the espoused theory and/or theory in use.

Several concepts that straddled the boundaries of categories were grouped differently in the alternative theories. For example IT involvement in business planning was categorized as being a business planning system issue in the espoused theory and theory in use, but as an IS function issue in the conceptual theory.

Whilst the conceptual theory was derived from research studies published several years ago, the espoused theory and theory in use were more current, being derived from data in the field. This is reflected in the fact that concepts relating to current trends and practices were more prominent in the theories derived from field data than the conceptual theory.

6.7.2 Comparison of Relationships between Categories

The relationships between categories were firstly compared concerning the number of impacts/influences emanating from a category and then by the number of times a category is impacted by other categories. Furthermore the matrix representations of the theories were compared.

In the conceptual theory the impacts of the external environment were broad, affecting not only the SISP Process, but also the organisation and IS function, as well as IS plan implementation, stakeholders and outcomes. The espoused theory and theory in use on the other hand showed fewer causal conditions, and these were mainly concentrated around the process. The same trend was apparent with the IS function context. The management mindset, IS plan implementation, alignment and outcomes categories were likewise more prominent and broader in influence in the conceptual theory. In the conceptual theory, alignment and outcomes were conceptualised as pre-implementation outcomes (inclusive of IS plan sub category), and post-implementation outcomes. The pre-implementation outcomes accounted for many of the propositions identified in the conceptual theory, but not in the other theories.

The impacts of the organisational context and business planning systems categories were more apparent in the theory in use although their impacts were centred mainly on the process category. The process and stakeholder categories also appeared more influential in the theory in use. The process predominantly influenced alignment in the espoused and conceptual theory, whilst in the theory in use other outcomes apart from alignment featured strongly. With the stakeholder profile, in both the espoused and conceptual theories, the main influences was on the process, whereas with the theory in use, the effects of stakeholder profile on implementation was given equal attention.

Across the 3 theories, the contextual factors of external environment, organisational context, IS function context and business planning system were the least impacted, whilst the process category as the core received the most impacts. In the theory in use, the implementation category was impacted to the largest extent as compared to the other theories, whilst the stakeholder profile was most prominently impacted in the conceptual theory. Finally the outcomes and alignment categories were impacted to quite a large degree across all three theories. Given they represent the outcomes of SISP, this was as expected.

Absent from the espoused and theory in use were explicit references to intervening conditions. These conditions are not as easily identifiable, thus their presence in the conceptual theory attests to the advantage of conceptual theorising, where careful and

rigorous investigation of complex phenomena such as SISP reveals more detailed and sophisticated explanations.

i Matrix Comparison

In all three theories, the relationships have been examined in the form of a matrix. Combining the three together into one matrix allowed for easy identification of commonalities and differences. In Table 6.8 below, it can be seen that relationships emanating or terminating with the process were most common, as well as the relationships emanating from the stakeholder profile. The outcomes of SISP were agreed to have an impact on both organisational performance and IS function performance in all theories.

It was also noticeable that a large number of relationships in the conceptual theory were not explicitly mentioned in the espoused theory and theory in use. This was partly due to the encapsulation of the IS Plan category in the Outcomes, but there may also be areas that had been given inadequate attention in practice. On the other side of the coin there were some relationships noted in the espoused theory and theory in use that were not present in the conceptual theory. These represent specific contributions of this study, and areas for future research. The particular pairs of categories were as follows:

- External environment to Management mindset about IT
- IS function Context to Business Planning System
- IS function Context to SISP Outcomes
- Business Planning System to IS function Context
- Business Planning System to SISP Outcomes
- SISP Process to Management mindset about IT

The lack of conceptual theory relationships emanating from or terminating on the plan category was due to the fact that this category was subsumed under the outcomes

category. It does not therefore mean that no such relationships were present in the conceptual theory.

Table 6.8: Matrix Comparison of Theories

	Ext	Org	IS	BPS	Proc	Mgt	Stake	Plan	Imp	Align	Out
Ext	-	I-C	I-C	C	<i>E-I-C</i>	I	C		C	C	E-C
Org		-	I-C	C	<i>E-I-C</i>	C	I-C	E-I	<i>E-I-C</i>	C	I-C
IS			-	E-I	<i>E-I-C</i>	C	C			C	I
BPS			E	-	<i>E-I-C</i>		<i>E-I-C</i>			I-C	I
Proc			C		C	E	<i>E-I-C</i>	E-I	<i>E-I-C</i>	<i>E-I-C</i>	<i>E-I-C</i>
Mgt			C		E-C	-	I-C		I-C	I-C	C
Stake					<i>E-I-C</i>	I-C	-	E-I	<i>E-I-C</i>	<i>E-I-C</i>	I-C
Plan								-	E-I		E
Imp					C	C			-	C	<i>E-I-C</i>
Align					C		C		C	-	E-C
Out		<i>E-I-C</i>	<i>E-I-C</i>		C	C	C		C	C	-

Key: C- Conceptual Theory; I – Theory in Use; E – Espoused Theory

6.7.3 Key Contributions to Theory

The conceptual theory is the embodiment of academic literature, therefore any comparisons of espoused theory and theory in use to mainstream literature can in effect be made by comparing these to the conceptual theory. Several key concepts emerged from espoused views and in use views that had no explicit equivalent in the conceptual theory. These concepts thus represent the key contributions of this study to theory in SISP. They will be discussed in turn, by the categories in which they appear.

i Business Planning System

Within this category was the *Organisational Profit Focus* concept, which appeared in the theory in use, but not explicitly in the espoused theory or conceptual theory. Where there is a profit focus in divisions or business units of large organisations, there is a tendency for these units to focus on their own strategies and success. It therefore

becomes difficult to come up with a shared vision and direction for the organisation as a whole, impeding strategic information systems planning.

ii External Environment

IT hype impact appeared as a concept in the theory in use. Whilst the IT industry often welcomes the hype and frenzy created around phenomena such as Y2K, the dot com explosion, BPR and ERP, the negative consequences of failed implementation and huge IT investments with little business benefit have often been to reduce the credibility of the profession. This results in the development of a negative management mindset about IT and whole-hearted embrace of views, such as those espoused by Carr (2003), on “IT doesn’t matter”. As ever before, therefore, CIOs still have to work hard at convincing management of the strategic potential of IS (Lederer & Mendelow, 1989).

iii Organisational Context

The *IT budgetary allocation* concept appeared in both the espoused theory and the theory in use. Where IT budgets are allocated before IS planning, SISP is done with a focus on managing a budget. Where the allocation is done after planning, SISP is often used as a means to generate support and approval for funding of IS initiatives. Relatedly, the *IT budget restrictions* concept appeared in theory in use. This concept reflects the consensus in the aftermath of the IT bubble, and the increased concern over the lack of tangible benefits from large IT investments (Manyika & Nevens, 2002). This has had the effect of an increased focus on financial control in SISP, and shorter planning horizons. According to Segars and Grover (1999), this focus on control is an indicator of a more rational planning process, which if combined with adaptation leads to more successful SISP, nevertheless. The downside is that the trend towards shorter planning horizons, leads to less planning at a strategic level, with an increased focus on tactical and operational matters (O’ Connor, 1993).

iv IS Function Context

Concerning the concept *IT Management Standards*, ITIL and COBIT were often mentioned as IT management tools. It was noted, too, that although there were similarities between managing the IS function and other functions in an organisation there were some attributes unique to IS, due to the application of the aforementioned tools. This led to the identification of the concept *IT Management Uniqueness*. The prominence of these concepts in the espoused theory and theory in use, and not the conceptual theory is an indicator of the more recent focus on IT governance in organisations (KPMG, 2004).

v SISP Process

In the espoused theory was a concept *Research and Development*. This research and development activity, it was believed, helped in planning, in that it enabled the IS department to discuss with clients their problems and requirements. Solutions appropriate to these needs could then developed. This was not always possible with top-down planning processes. The added advantage of this research and development activity was a more alacritous SISP process, as it allowed for new IT trends and applications to be examined in advance. Where an opportunity arose for application of these new ideas, they would have already been investigated, thus speeding up the decision-making process.

vi IS Plan Implementation

An interesting concept categorised under the theory in use was the *Strategy to project ratio*. This concept reflects the fact for each strategic initiative in the IS plan, there may be several projects that will run, either in parallel or sequentially. This concept has important implications, in that it affects the rate and extent of strategy implementation (Gottschalk, 1999a). Where there is a large strategy to project ratio, then the rate and extent of implementation may be impacted.

6.8 Limitations of the Study and Ideas for Future Research

6.8.1 Reticence

Several interviewees may have been reticent of being too critical of organisational practice, or a sense of loyalty may have sub-consciously lead to defence of current practice, thus the tendency towards congruence between the two views. Thus, alternative means of eliciting theory in use may be employed in future research (*e.g.*, observation, document analysis).

6.8.2 Deriving Theory in Use

Similarities between espoused and in use theory may be as a result of the manner in which each was derived. The espoused, by determining what respondents believed should be the way SISP is carried out, and then in the same interview asking how it was done in practice. This approach generally invites comparisons between the two views, resulting in the same set of concepts and categories emerging, which differ only in terms of their dimensions (*e.g.*, in one interview it was espoused that there should be full integration between business and IS planning, but in practice, these were separate sequential processes). In both views, the same concept, business planning to SISP integration, appears. Future research might then look at the following alternative research tactics to better differentiate espoused and in use theories:

- More detailed analysis, through case studies, to further elucidate theory in use.
- Observation (ethnographic study), to better define theory in use.
- Two separate interviews per respondent, one to focus on espoused views, and the other to focus on in use views.
- Techniques of Argyris & Schon (1974) to develop in use theory.

In formulating the theories, data from all 7 interviews were aggregated. Thus, even if only one respondent had made an assertion indicating a relationship, this was included

in the theory. For example, it was espoused that due to dynamism in the external environment, planning approaches should be made flexible. In use, one case was reported where this was in fact happening, whilst in several other cases, rigid planning approaches were still being used, despite the dynamism, but possibly because planning horizons had been made shorter. Future research might therefore attempt to carry out further investigation around concepts and relationships that are not prominent, and identify possible reasons for this.

6.8.3 Intervening Conditions

The lack of intervening conditions in the espoused theory and theory in use, and their presence in the conceptual theory may have been due to the fact that more data was available for developing conceptual theory. The principle of emergence may have also been more strictly applied in developing the espoused theory and theory in use. As such these intervening conditions were not immediately obvious. Further more detailed analysis may have, however, revealed the existence of such conditions.

6.9 Recommendations and Implications for Theory and Practice

6.9.1 Benefit of Conceptual Theory

The conceptual theory has been derived from multiple sources, where a diverse array of research approaches have been employed, including action research (*e.g.*, Salmela *et al.*, 2000), case study (*e.g.*, Cerpa & Verner, 1998) and surveys (*e.g.*, Segars & Grover, 1999). Views examined have thus varied from what is done in practice to what is espoused, and so in effect represent a theory that aggregates both espoused and in use views into one. This explains the broader relationship patterns in the conceptual theory, as compared to either espoused or in use theories. This broad theory is useful and does provide rich insight into SISP, as it may identify areas that have not been given enough attention in practice. For example, the explicit absence of intervening conditions in both espoused theory and theory in use, and their presence in the conceptual theory attests to this.

6.9.2 Benefit of Espoused Theory

The benefit of espoused theory is that it tends to be idealistic, often playing down the organisational constraints that may inhibit achievement of an ideal approach to planning. It is thus useful as a means of articulating a vision of where the organisation would like to be (Senge, 1990). The creative tension that is developed when comparing this to the current organisational situation should allow for changes to be made to improve the situation (Senge, 1990).

6.9.3 Benefit of Theory in Use

Strauss & Corbin (1998) recount a situation where a research subject became exasperated at a researcher, who seemed to have been focusing on what the agents believed, rather than what they did. The agent retorted: "*You researchers are so dumb. You ask on your questionnaire about what we believe, but not [about] what we do!*" (p. 32).

This amply illustrates the need for researchers to pay attention to practices of agents, rather than their beliefs only, in order to develop theory more relevant to practice. This has indeed become a clarion call in the IS discipline (Kock *et al.*, 2002). By seeking to develop theories in use, using a method aimed at developing theory grounded in data, this call can be heeded.

6.9.4 Diagnostic Benefit of Espoused Theory and Theory in Use

The theory in use informs and is informed by practice, whilst similarly the espoused theory informs and is informed by theory in use. The gap between the two theories represents a source of creative tension (Senge, 1990), which may motivate and strengthen the desire to put thoughts into actions (espoused theory into use). The wider the gap, the greater dissatisfaction with the state of current affairs, and the greater the desire for change. Even where there is a high level of congruence between the two theories, a careful analysis of the two is still useful, as even small incremental

changes to processes may result in large and sometimes radical improvement (Galliers & Baker, 1995).

Examination of the two theoretical perspectives serves as a useful diagnostic tool for planners, in order for improvements to be made to their planning systems. Planners do not always “practice what they preach”, and do not always “learn from their mistakes”. The latter requires careful reflection on what has been done in practice, and articulation of a theory in use. An espoused theory can similarly be developed by reflecting on what works and what does not in practice, and by reference to academic literature and theory, where comprehensive research has been done. This richer espoused theory could then serve as a basis for formulating an action plan to make improvements to practice, resulting in a new theory in use more compatible with espoused theory. Environmental dynamism, and unforeseen circumstances could, however, lead to unintended consequences, which then require re-analysis of the new situation, and reformulation of the new theory in use. Consideration of this new reality may then result in an adjustment to espoused theory, and so the cycle continues. This learning cycle needs to be consciously examined and articulated through the development of espoused theories and theories in use. The use of the grounded theory method to develop these theories would be a novel way of performing this operation, especially for practitioners, who tend to be averse to theoretical practices. The benefits flowing from improved SISP processes may motivate and encourage development and adoption of competencies in theory building.

Where there is a high degree of congruence between espoused and in use theories, and yet still dissatisfaction with SISP effectiveness, planners need to question whether the espoused theory is valuable or valid, and carefully examine the assumptions upon which it is based (Baker, 1995).

Where there is a high degree of congruence, and effective SISP, then a match has been achieved. The learning cycle should continue to be employed, however, due to the dynamism and uncertainty in the environment which may alter the assumptions on which the theories have been based, leading to less effective SISP systems (Baker, 1995).

High levels of incongruence require that actions be taken to restore a balance. In some instances, however, these may not be feasible, and will be revealed through the theories developed. For example, resistance within an organisation to modify the approach to planning may be preventing identification of opportunities to use IT strategically. In such cases, informal approaches to achieving the same end can be devised, which are not in conflict with organisation norms and policies.

Interview data has shown that planners are quick to evaluate SISP in terms of implementation performance, and impact of deliverables. Less attention and thought is given to evaluating the overall SISP system. Developing espoused and in use theories of SISP, and evaluating the gap between them may be a mechanism whereby the overall system can be evaluated and improved.

6.9.5 Single versus Double loop learning

Both espoused theory and theory in use exhibited characteristics of single loop learning. Alignment features as the key goal for carrying out the SISP process, especially in the espoused theory. Such goal-seeking behaviour, where the end goal is monitored, and corrections are made whenever the system deviates from this goal, is characteristic of single loop learning. Other characteristics of single loop learning were the necessity for a clear business strategy to drive a top-down SISP process, and the lack of evidence that the overall planning system was evaluated, as suggested by Baker (1995). Evaluation sessions were mainly centred on reviewing existing projects for conformance to budget, schedule and specification.

Nevertheless, some evidence of the more effective double loop learning was evident through the fact that rationality in SISP was tempered with the need for flexibility and adaptation to accommodate a dynamic external and internal environment. Double loop learning was also evident by the presence of broad stakeholder profiles, especially in the theory in use, which allowed for bottom-up considerations rather than purely top-down dictates.

Double loop learning further requires that assumptions embedded within norms and procedures be questioned and challenged as a means of improving effectiveness in SISP. Certain assumptions, however, remained unquestioned. For example, the need for a clear business strategy was both espoused and seen as necessary in practice. Hackney *et al.* (2000) question this assumption, given that in many cases business strategy is dynamic and fluid. The assumption that alignment is the ultimate goal of SISP also remained unquestioned. Ciborra & Hanseth (2001) illustrate that within a formative context of management as control, the pursuit of top-down strategic alignment leads to endless drift, as the impact of environmental and business change, coupled with implementation difficulties and resistance to change, make alignment an elusive goal. Furthermore, the end result of this is the ever-increasing complexity of IT infrastructure, as systems are developed and modified in the process of chasing alignment.

Finally, the theory in use specifically, gives a sense that organisational culture, norms and procedures must be taken as given, and SISP must be conducted within these parameters. The danger here is that SISP may remain ineffective in organisations that have cultures and procedures that are not conducive to SISP. Thus, this assumption too needs to be questioned.

By going further in SISP, and deliberately questioning the assumptions underlying organisational norms, culture, routines and procedures, the true benefit of IS may be finally unleashed, as such questioning may then offer opportunities for using IT to enable whatever organisational change is then identified as necessary. Confronting these assumptions, however, may be seen as outside the scope of SISP, and in the domain of strategic business planning. As such, the division between SISP and business planning may become blurred, and the processes indistinguishable. This is altogether not a bad idea, as fully integrated processes have been found by Teo & King (1999) to have the biggest impact on improving organisational performance. The espoused ideal of IT as an enabler of business process change, and SISP as an organisational learning activity then become more of a reality in organisations (Galliers & Baker, 1995).

6.9.6 A Role for Alternative Theoretical Perspectives

Conventional wisdom in SISP purports that an organisational approach to SISP is the most effective, and may represent the purest form of SISP (Doherty *et al.*, 1999, Earl 1993, Segars & Grover 1999). Such an approach is characterised by a high level of both rationality and adaptation, with broad stakeholder profiles (Segars & Grover 1999). Plan formulation and implementation are seen as seamlessly integrated processes with such an approach, and the underlying school of thought is learning (Segars & Grover, 1999). The conceptual theory, espoused theory and theory in use all exhibited characteristics of this approach. These were most marked within the theory in use where formal, top-down, comprehensive processes well integrated with business planning were shown to yield positive benefits. Due to dynamism and turbulence in the environment, however, the processes and plans needed to be flexible and adaptive to change. Again in the theory in use, plan formulation and implementation were closely integrated activities. The discussion of single versus double loop learning did show that there were some shortcomings in the theories constructed in that certain assumptions remained unquestioned.

The theory in use provided support for a structural perspective of SISP given the strongly social nature it exhibited through the prominence of the organisational and stakeholder profile categories (Lamprecht & Roode, 1999). The goals for SISP in the theory in use in addition went beyond those espoused, thus also giving credence to the views of Heng & Newman (2001) that SISP is a social, communicative, sense making activity, and is not just concerned with the construction of technological blueprints.

Finally, in considering the nature of espoused theory and theory in use and the interaction between them, it was recognised that both theories hold value. The espoused theory is less concerned with the constraints imposed by organisational routines and activities, and is thus useful for espousing a vision of ideally how SISP should be carried out (Senge, 1990). It is thus equivalent to the “in-order to” motive that Ciborra (1999) refers to as providing the rationale for agents taking action. The theory in use, on the other hand, is equivalent to the “because-of” motives, which refer to the past experiences of an actor, and that are drawn on selectively, depending

on the situation and circumstance of the decision-making act. Whilst both are relevant and important, Ciborra (1999) notes that the espoused theory represents only the tip of the iceberg, while the theory in use represents the drifting mass at the bottom, sometimes tacit, and only made explicit by an actor reflecting on practice after the fact (Ciborra, 1999).

Much of the conventional wisdom in SISP seems to be based on espoused theory, where the focus is primarily on process and the achievement of alignment. These issues rank as top concerns by IS Managers (Luftman *et al.*, 2004), and are the perennial “flavour of the month” in studies of key issues. Too much of a focus on these factors, however, leads to the endless production of “new” SISP methods, procedures and techniques, with no corresponding improvement in SISP practice. A consideration of theory in use on the other hand leads to greater recognition of the social nature of SISP, the central role of stakeholders, and a realisation that “*the deep nature of decision-making appears to be one of improvisation*” (Ciborra, 1999, p. 145). Thus, whilst an organisational learning approach to SISP has been recognised as invaluable in the mainstream academic literature (Huysman *et al.* 1994, Baker 1995, Segars & Grover 1999), further improvement can be made by recognising that structurational theory (Lamprecht & Roode, 1999) and improvisation (Ciborra, 1999) hold the key to a better conceptualisation of SISP and improved practice. Future research can therefore build on this study by examining specifically these theories in the context of SISP.

Chapter 7 Evaluation of Contribution

In order to evaluate the contribution made by this study, a theoretical framework developed by Barrett & Walsham (2004) is employed. This framework was developed in order to explore how IS interpretive case studies make contributions. Barrett & Walsham (2004) applied this framework to a well cited IS interpretive case study to demonstrate its efficacy. As shown in Table 7.1 below, this framework has four main concepts – structuring intertext coherence, problematising context for contribution, positioning as translating interests and qualitative generalisations as content of contributions. Within each are various tactical approaches used to construct a contribution.

Table 7.1: Key Concepts for Constructing Contributions (Barrett & Walsham, 2004)

Strategic Concept	Tactical Approach
Structuring Intertextual Coherence	Synthesised coherence Progressive coherence Non-coherence
Problematising Context for Contribution	Incompleteness Inadequacy Incommensurability
Positioning as Translating Interests	Framing for particular audiences Staging to highlight what audiences should find interesting to discuss, and admitting what they may find disputable. Captation or subtle control of objector’s moves with due consideration of allowed margin of negotiation of soft facts. Stacking or the extension of evidence to inductively support theories.
Qualitative Generalisations as Content of Contributions	Concept Development Theory generation Specific implications Rich insights

7.1 Structuring Intertextual Coherence

Structuring intertextual coherence involves re-presenting and organising the “*existing knowledge so as to configure a context for contribution that reflects the consensus of previous work*” (Locke & Golden-Biddle, 1997, p. 1029 cited in Barrett & Walsham 2004, p. 296). Three tactics for achieving this are synthesised coherence, progressive coherence, and non-coherence. Synthesised coherence occurs when manuscripts “*cite and draw connections between works and investigative streams not typically cited together to suggest the existence of the undeveloped research areas*” (Locke & Golden-Biddle, 1997 cited in Barrett & Walsham 2004, p. 296). Progressive coherence reflects “*networks of researchers linked by shared theoretical perspectives and methods working on research programs that have advanced over time*” (p. 1035). Finally non-coherence refers to “*referenced works that are presented as belonging to a common research program, but as linked by disagreement*” (p. 1038).

In this study a combination of synthesised coherence, progressive coherence, and non-coherence was employed. Synthesised coherence was apparent in the drawing together of theory of action concepts (espoused theory and theory in use) derived from the work of Argyris & Schon (1974) with the practice of SISP (see Chapters 1 and 2). In order to develop espoused theories and theories in use concerning the practice of SISP, the grounded theory methodology was employed (Strauss & Corbin, 1998). This synthesis of disparate ideas was novel, in that espoused theory and theory in use are concerned with the taking of action by agents, whilst the grounded theory method is concerned with developing theory that is grounded in agents’ actions concerning a phenomenon (see Chapter 2 and Section 4.5). Applying the grounded theory method to develop espoused theory and theory in use concerning a phenomenon usually assumed to be separate from action (planning) was a unique contribution of this study.

Progressive coherence was apparent in that the conventional wisdom concerning SISP is that an organisational approach to SISP is the most successful (Earl, 1993). Such an approach is deemed to have as its underlying school of thought the learning paradigm (Segars & Grover, 1999). By examining SISP from the perspective of espoused theories and theories in use, ideas which have become very much integrated into the

practice of organisational learning (see Chapter 2), a shared theoretical thread has been identified. The study has revealed SISP to be more than just a rational top-down planning exercise, but very much a communicative sense-making, social activity (Heng & Newman, 2001). As such it resonates also with alternative theoretical perspectives of SISP such as structuration theory (Lamprecht, 1997), and improvisation (Ciborra, 1999) (discussed in Section 3.8 and Section 6.9).

Non-coherence is apparent, and is in fact embedded in SISP in that two styles of planning (**deliberate**, rational and top-down on one hand, and **emergent**, incremental, and bottom-up on the other) are juxtaposed (Section 3.8). Evidence arose from deriving conceptual theory based on the literature (Section 5.1), as well as espoused theory and theory in use derived from IS planner views (Sections 5.3 and 5.4). This paradoxical nature points to improvisation as perhaps the basis for developing a better understanding, and for improving SISP practice (Ciborra, 1999) (discussed in Section 3.8 and 6.9).

7.2 Problematising Context for Contribution

Three ways of problematising an intertextual field include incompleteness, inadequacy, and incommensurability. Incompleteness occurs when it is claimed that the literature is not finished, and a study will aim at further development. Inadequacy is when it is claimed the literature does not sufficiently incorporate alternative views and perspectives about a phenomenon, whilst incommensurability is when it is suggested the literature is inaccurate (Barrett & Walsham, 2004). In this study, the phenomenon of SISP was problematised as incomplete and inadequate.

Incompleteness was claimed, as although organisational learning had been mentioned as a means of conceptualising SISP in literature (Huysman *et al.* 194, Baker 1995, Segars & Grover 1999), the concepts of espoused theory and theory in use specifically had not been examined in this context (see Section 3.8). Thus further development was envisaged through a detailed investigation of the latter. Furthermore, theory in SISP had not been given much attention in mainstream literature, with the theory

developed by Lederer & Salmela (1996) portraying SISP by way of a variance theoretical framework, based on the concept of planning as an input-process-output model. This framework was deemed incomplete, as even further meta-analysis based on this model, failed to provide a richer understanding of the processual elements of SISP (Brown, 2004) (Section 3.9). Thus, further development of theory using an interpretive approach was deemed necessary.

Inadequacy was again the basis for problematising as the systems thinking and organisational learning literature had very much influenced mainstream thinking on SISP. Alternative theoretical perspectives, such as structuration theory and improvisation were not as prominent, and were shown to deserve attention, too (Section 3.8).

7.3 Positioning as Translating Interests

Positioning tactics suggested by Barrett & Walsham (2004), and as explained in Table 7.1 were framing, staging, captation and stacking.

The study was aimed at examining theory in SISP from the basis of conceptual literature, espoused views of planners and their reflections on practice (Chapter 5). The aim was to develop a better understanding of theory in SISP, and especially the interaction and relationship between espoused theory and theory in use. The contribution was therefore **framed** so as to be of interest to those concerned with theory in IS (IS Researchers), as developing a strong theory to underpin SISP has been put on the research agenda by leading researchers in the field (Lederer & Salmela, 1996) (see Chapter 3). IS Managers, too have consistently ranked SISP as a key concern over the years (Luftman *et al.*, 1994) (Section 3.1), thus the contribution was aimed at this audience too, by the development of theory grounded in the “exigencies of daily activities” (Strauss & Corbin, 1998).

The **staging** tactic has been employed by highlighting the paradoxical nature of SISP, which possesses characteristics of rationality and adaptation, as initially elucidated by

Segars & Grover, 1999) (Section 3.8). Of interest, is the presence of this theme in conceptual theory, espoused theory and theory in use (See Chapter 5). Also of interest is the focus of SISP espoused theory on the process and alignment categories, which suggests a reason for the proliferation of SISP methods, tools and techniques, and the reason for the importance attached to these phenomena in key issues studies (Luftman & McLean, 2004) (see Section 5.3). The theory in use on the other hand emphasises organisational context and stakeholder profile as key categories, suggesting a more sociological conceptualisation of SISP (Lamprecht, 1997) (see Section 5.4). Improvisation theory suggests that espoused theory and theory in use are both important and the interplay between them is almost a natural process in decision-making, supporting, therefore, improvisation as the basis for conceptualising SISP (Ciborra, 1999) (see Section 3.8 and 6.9).

Captation is used as a tactic by presenting the evidence which points to the paradoxical nature of SISP and by highlighting key differences between espoused theory and theory in use (Section 5.5). That the findings suggest structuration theory and/or improvisation as the basis for conceptualising SISP is left open to debate and further investigation (Section 6.9).

Stacking was used as a tactic in that the research began by reflecting on theory that was developed by employing the technique of meta-analysis (Section 3.9). Due to the shortcomings inherent in this approach, an alternative means of developing theory based on literature was employed – that of the grounded theory method (Section 5.1). This conceptual theory then informed the development of espoused theories and theories in use, based on data gathered from the field (Sections 5.2, 5.3 and 5.4). These theories, and the differences between them (Sections 5.5 and 5.6) provided support for the conceptualisation of SISP as a sociological sense-making, organisational learning activity, perhaps best achieved through improvisation (Section 6.9).

7.4 Qualitative Generalisations

Four types of generalisation mentioned by Barrett & Walsham (2004) are development of **concepts**, generation of **theory**, drawing of specific **implications**, and contribution of rich **insights**. The development of concepts and generation of theory proceeded by employing the grounded theory methodology (Section 4.5 and 4.6) which ensured the three theories – conceptual, espoused and theory in use were developed according to sound principles (Section 5.1 to 5.4). Specific implications were drawn through a detailed comparison of the three theories, especially the espoused and in use theories (Sections 5.5 and 5.6), before insights were discovered (Section 6.9). Several of these insights are summarised as follows:

The benefit provided by the conceptual theory was that it was very broad in scope, allowing for identification of areas that have not been given enough attention in practice. The espoused theory and theory in use, being theories of action were deemed to be very relevant to SISP practice. By using the grounded theory method to develop them, this relevance was further ensured, given that this approach to theory-building develops theory grounded in data.

The theory in use informs and is informed by practice, whilst similarly the espoused theory informs and is informed by theory in use. The gap between the two theories represents a source of creative tension (Senge, 1990), which may motivate and strengthen the desire to put thoughts into actions (espoused theory into use). Developing espoused and in use theories of SISP, and evaluating the gap between them may be a mechanism whereby the overall SISP system can be evaluated and improved.

Both espoused theory and theory in use exhibited characteristics of single loop learning. Nevertheless, some evidence of the more effective double loop learning also emerged. Certain assumptions about SISP, however, remained unquestioned. By going further in SISP, and deliberately questioning the assumptions underlying organisational norms, culture, routines and procedures, the true benefit of SISP may be finally unleashed.

Conventional wisdom in SISP purports that an organisational approach to SISP is the most effective, and may represent the purest form of SISP. The conceptual theory, espoused theory and theory in use all exhibited characteristics of this approach. In the theory in use, plan formulation and implementation were closely integrated activities, which highlighted the emergent nature of strategy. The theory in use also provided support for a structurational perspective of SISP given the strongly social nature it exhibited through the prominence of the organisational and stakeholder profile categories (Lamprecht & Roode, 1999). The goals for SISP in the theory in use in addition went beyond those espoused, thus also giving credence to the views of Heng & Newman (2001) that SISP is a social, communicative, sense making activity, and is not just concerned with the construction of technological blueprints.

Finally, in considering the nature of espoused theory and theory in use and the interaction between them, it was recognised that both theories hold value. The espoused theory is less concerned with the constraints imposed by organisational routines and activities, and is thus useful for espousing a vision of ideally how SISP should be carried out (Senge, 1990). A consideration of theory in use on the other hand leads to greater recognition of the social nature of SISP, the central role of stakeholders, and a realisation that “*the deep nature of decision-making appears to be one of improvisation*” (Ciborra, 1999, p. 145). Integrating and synthesising these ideas into mainstream SISP thinking should therefore result in better conceptualisation of SISP and improved practice.

References

- Abdul-Gader, A. (1997). Information systems strategies for multinational companies in Arab Gulf countries. *International Journal of Information Management*, 17(1): 3-12.
- Agarwal, R., Roberge, L. & Tanniniru, M. (1994). MIS planning: A methodology for systems prioritisation. *Information & Management*, 27: 261-274.
- Aladwani, A. (2001). IT planning effectiveness in a developing country. *Journal of Global Information Technology Management*, 4(3): 51 -.65.
- Ang, J. & Quek, S. (1999). Modeling IS planning benefits using ACE. *Decision Sciences*, 30(2): 533-562.
- Ang, J. & Teo, T. (1997). CSFs and sources of assistance and expertise in strategic IS planning: A Singapore perspective. *European Journal of Information Systems*, 6(3): 164-171.
- Ang, J., Shaw, N. & Pavri, F. (1995). Identifying strategic management information systems planning parameters using case studies. *International Journal of Information Management*, 15(6): 463-474.
- Argyris, C. (1999). *On Organisational Learning*. Blackwell, Oxford.
- Argyris, C., Putnam, R. & McLain Smith, D. (1985). *Action Science*. Jossey-Bass Publishers, San Francisco.
- Argyris, C & Schon, D. (1974). *Theory in Practice. Increasing Professional Effectiveness*. Jossey-Bass Publishers, San Francisco.
- Bajally, S. (1998). Strategic information systems planning in the public sector. *American Review of Public Administration*, 28(1): 75-85.
- Baker, B. (1995). The role of feedback in assessing information systems planning effectiveness. *Journal of Strategic Information Systems*, 4(1): 61-80.
- Barrett, M. & Walsham, G. (2004). Making contributions from interpretive field studies: Examining processes of construction and use, in *Information Systems Research. Relevant Theory and Informed Practice* (Eds: B. Kaplan, D. Truex III, D. Wastell, A. Wood-Harper, J. DeGross). Kluwer Academic Publishers, Boston.

- Basu, V., Hartono, V., Lederer, A. & Sethi, V. (2002). The impact of organisational commitment, senior management involvement and team involvement on strategic information systems planning. *Information & Management*, 39: 513-524.
- Benamati, J. & Lederer, A. (2001). Rapid information technology change, coping mechanisms and the emerging technologies group. *Journal of Management Information Systems*, 17(4): 183-202.
- Bergeron, F., Buteau, C. & Raymond, L. (1991). Identification of strategic information systems opportunities: Applying and comparing two methodologies. *MIS Quarterly*, 15(1): 99-103.
- Bloch, D. & Borges, N. (2002). Organisational learning in NGOs: An example of an intervention based on the work of Chris Argyris. *Development in Practice*, 12(3/4): 461 – 472.
- Brancheau, J.C., Janz, B.D. and Wetherbe, J.C. (1996) Key issues in information systems management: a shift toward technology infrastructure. *MIS Quarterly*, 20: 225-242.
- Broadbent, M., Weill, P. & Neo, B. (1999). Strategic context and patterns of IT infrastructure capability. *Journal of Strategic Information Systems*, 8: 157-187.
- Brown, I. (2002). Systems thinking in the theory and practice of strategic information systems planning, in *Systems Theory and Practice in the Knowledge Age* (Eds: G. Ragsdell, D. West, J. Wilby), Kluwer Academic/Plenum Publishers, New York.
- Brown, I. (2004). Testing and extending theory in strategic information systems planning through literature analysis. *Information Resources Management Journal*, 17(4): 20 – 48.
- Brown, I. & Roode, J. D. (2004). Using grounded theory in the analysis of literature: The case of strategic information systems planning, *Proceedings of the 2004 Australasian Conference on Information Systems*, 1 – 3 December 2004, Hobart, Australia [CD].
- Bryant, A. (2002). Re-grounding grounded theory, *Journal of Information Technology Theory and Application*, 4(1): 25 – 42.
- Burrell, G. & Morgan, G. (1979). *Sociological Paradigms and Organisational Analysis: Elements of the Sociology of Corporate Life*. Heinemann, London.
- Byrd, T., Sambamurthy, R. & Zmud, R. (1995). An examination of IT planning in a large, diversified public organisation. *Decision Sciences*, 26(1): 49-74.

- Carr, N. (2003). IT doesn't matter, *Harvard Business Review*, 81(5): 41 – 49.
- Chan, Y. & Huff, S. (1993). Strategic information systems alignment. *Business Quarterly*, 58(1): 51-55.
- Cerpa, N & Verner, J. (1998). Case study: the effect of IS maturity on information systems strategic planning. *Information & Management*, 34(4): 199 – 208.
- Chan, Y., Huff, S., Barclay, D. & Copeland, D. (1997). Business strategic orientation, information systems strategic orientation and strategic alignment. *Information Systems Research*, 8(2): 125-150.
- Checkland, P. (1989). Soft systems methodology, in *Rational Analysis for a Problematic World* (Ed. J. Rosenhead), Wiley & Sons, Chichester.
- Checkland, P. (2002). Thirty years in the systems movement: Disappointments I have known, and a way forward. *Systemist*, 24(2): 99 – 112.
- Checkland, P. and Holwell, S. (1998). *Information, Systems and Information Systems – Making sense of the field*, Wiley, Chichester.
- Chu, P. C. (1995) Conceiving strategic systems. *Journal of Systems Management*, 46(4): 36-41.
- Ciborra, C. (1999). A theory of information systems based on improvisation, in *Rethinking Management Information Systems* (Eds: W. Currie & R. Galliers), Oxford University Press, Oxford.
- Ciborra, C. & Hanseth, O. (2001). Introduction: From Control to Drift, in *From Control to Drift. The Dynamics of Corporate Information Infrastructures* (Ed: C. Ciborra), Oxford University Press, Oxford.
- Clark, C., Clark, J., Gambill, S. & Fielder, B. (2000). Strategic information systems planning paradoxes. *Information Strategy: The Executive's Journal*, 17(1): 27 – 31.
- Cohen, J. (2002). Information systems strategic planning and IS function performance: An empirical study. *South African Computer Journal*, 28: 44-53.
- Conrath, D., Ang, J. & Mattay, S. (1992). Strategic planning for information systems: A survey of Canadian organisations. *INFOR*, 30(4): 364-378.
- De Vreede G., Jones, N. & Mgaya, R. (1999). Exploring the application and acceptance of group support systems in Africa. *Journal of Management Information Systems*, 15(3): 197 – 234.

- De Jarnett, L., Laskey, R. & Trainor, H. (2004). From the CIO point of view: The "IT doesn't matter" debate. *Communications of the Association for Information Systems*, 13(26): 1 – 24.
- Doherty, N., Marples, C. & Suhaimi, A. (1999). The relative success of alternative approaches to strategic information systems planning: An empirical analysis. *Journal of Strategic Information Systems*, 8: 263-283.
- Duchscher, J & Morgan, D. (2004). Grounded theory: reflections on the emergence vs. forcing debate. *Journal of Advanced Nursing*, 48 (6): 605 – 612.
- Earl, M. (1993). Experiences in strategic information systems planning. *MIS Quarterly*, 17(1): 1-21.
- Eden, C. (1989). Using cognitive mapping in strategic options development analysis (SODA), in *Rational Analysis for a Problematic World* (Ed: J. Rosenhead), Wiley & Sons, Chichester.
- Fink, D. (1994). Information systems planning in a volatile environment. *Long Range Planning*, 27(6): 108 – 114.
- Finnegan, P., Galliers, R. & Powell, P. (1997). Investigating inter-organisational systems planning practices in Ireland and the UK. *Proceedings of the 5th European Conference on Information Systems*: 281-294.
- Finnegan, P., Galliers, R. & Powell, P. (1999). Inter-organisational systems planning: Learning from current practices *International Journal of Technology Management*, 17(1): 129-144.
- Flynn, D. & Goleniewska, E. (1993). A survey of the use of strategic information systems planning approaches in UK organisations. *Journal of Strategic Information Systems*, 2(4): 292-319.
- Flynn, D. & Hepburn, P. (1994). Strategic planning for information systems - a case study of a UK metropolitan council. *European Journal of Information Systems*, 3(3): 207-217.
- Galliers, R. (1987). Information systems planning in the United Kingdom and Australia - a comparison of current practice. *Oxford Surveys in Information Technology*, 4: 223-255.
- Galliers, R. (1991). Strategic information systems planning: myths, realities and guidelines for successful implementation. *European Journal of Information Systems*, 1(1): 55-64.

- Galliers, R. (1993). Towards a flexible information architecture: Integrating business strategies, information strategies and business process redesign. *Journal of Information Systems*, 3: 199-213.
- Galliers, R. & Baker, B. (1995). An approach to business process engineering: The contribution of socio-technical and soft OR concepts, *INFOR*, 33(4): 263-278.
- Galliers, R. Pattison, E. & Reponen, T. (1994) Strategic information systems planning workshops: Lessons from three cases. *International Journal of Information Management*, 14: 51-66.
- Giddens, A. (1984). *The Constitution of Society*, Polity Press, Cambridge.
- Glaser, B. (1992). *Emergence vs. Forcing. Basics of Grounded Theory Analysis*. Sociology Press, Mill Valley.
- Glaser, B. & Strauss, A. (1967). *The Discovery of Grounded Theory: Strategies for Qualitative Research*. Aldine, New York.
- Gottschalk, P. (1999a). Implementation predictors of strategic information systems plans. *Information & Management*, 36: 77-91.
- Gottschalk, P. (1999b). Strategic information systems planning: The IT strategy implementation matrix. *European Journal of Information Systems*, 8(2): 107-118.
- Goulding, C. (2002). *Grounded Theory. A Practical Guide for Management, Business and Market Researchers*. Sage, London.
- Greenwood, J. (1998). The role of reflection in single and double loop learning. *Journal of Advanced Learning*, 27: 1048 – 1053.
- Hackney, R., Burn, J. & Dhillon, G. (2000). Challenging assumptions for strategic information systems planning: Theoretical perspectives. *Communications of the Association for Information Systems*, 3(9): 1 – 24.
- Hackney, R. & Kawalek, J. (1999). Strategic information systems planning: Perspectives on the role of the 'end-user' revisited. *Journal of End User Computing*, 11(2): 3-12.
- Hagmann, H. & McCahon, C. (1993) Strategic information systems and competitiveness. *Information & Management*, 25: 183-192.
- Hann, J & Weber, R. (1996). Information systems planning: A model and empirical tests. *Management Science*, 42(7): 1043-1064.

- Hart, M., Berkowitz, J., Ryan, J. & Waspe, K. (2004). Key information systems management issues: A comparative study in South Africa, *South African Journal of Business Management*, 35(4): 49 – 59.
- Heng, M. & Newman, M. (2001). Beyond the espoused goals of IS/IT strategy planning. *Serie Research Memoranda*, Vrije Universiteit Amsterdam: 1 – 28.
- Howcroft, D. & Trauth, E. (2004). The choice of critical information systems research, in *Information Systems Research. Relevant Theory and Informed Practice* (Eds: B. Kaplan, D. Truex III, D. Wastell, A. Wood-Harper, J. DeGross), Kluwer Academic Publishers, Boston.
- Huff, S. & Beattie, S. (1985). Strategic versus competitive information systems, *Business Quarterly*, 50: 97 – 102.
- Hughes, J. (1980). *The Philosophy of Social Research*, Longman, London.
- Hughes, J. & Jones, S. (2003). Reflections on the use of grounded theory in interpretive information systems research. *Proceedings of the 11th European Conference on Information Systems*, 19 – 21 June, Naples, Italy.
- Huysman, M., Fischer, S. & Heng, M. (1994). An organisational learning perspective on information systems planning, *Journal of Strategic Information Systems*, 3(3): 165 – 177.
- Hwang, M., Windsor, J. & Pryor, A. (2000). Building a knowledge base for MIS research: A meta-analysis of a systems success model, *Information Resources Management Journal*, 13(2): 26 – 32.
- Iivari, J., Hirschheim, R. and Klein, H. (1998). A paradigmatic analysis contrasting information systems development approaches and methodologies. *Information Systems Research*, 9(2): 164–187.
- Introna, L. & Whitley, E. (1997). Against method-ism. Exploring the limits of method. *Information Technology & People*, 10(1): 31-45.
- Jiang, J. & Klein, G. (1999). Project selection criteria by strategic orientation. *Information & Management*, 36(2): 63-75.
- Kearns, G. & Lederer, A. (1997). Alignment of information systems plans with business plans: The impact on competitive advantage. *Proceedings of the 2nd Association for Information Systems Conference*: 840-842.

- Keams, G. & Lederer, A. (2000). The effect of strategic alignment on the use of IS-based resources for competitive advantage. *Journal of Strategic Information Systems*, 9: 265-293.
- Kettinger, W., Teng, J. & Guha, S. (1997). Business process change: A study of methodologies, techniques, and tools. *MIS Quarterly*, 21(2): 55 – 80.
- King (2000). Assessing the efficacy of IS strategic planning, *Information Systems Management*, Winter: 81 – 83.
- King, W. & Teo, T. (2000). Assessing the impact of proactive versus reactive modes of strategic information systems planning *OMEGA - International Journal of Management Science*, 28(6): 667-679.
- Klein, H. & Myers, M. (1999). A set of principles for conducting and evaluating interpretive field studies in information systems. *MIS Quarterly*, 23 (1): 67 – 94.
- Kock, N., Gray, P., Hoving, R., Klein, H., Myers, M. & Rockart, J. (2002). IS research relevance revisited: subtle accomplishment, unfulfilled promise, or serial hypocrisy. *Communications of the Association for Information Systems*, 8: 330 – 346.
- KPMG (2004). Creating stakeholder value in the information age. KPMG Press Release on *ITWeb*, <http://www.itweb.co.za>. Accessed: 23rd February, 2005.
- Lamprecht, C. W. (1997). The social constitution of information systems strategy: Cultivating a strategic information systems environment, *Unpublished PhD Thesis*, University of Pretoria: 1 – 306.
- Lamprecht, C. & Roode, J. D. (1999). Cultivating a strategic information systems environment – a structurational model of SISP, *Research Report*, University of Pretoria: 1 – 47.
- Lederer, A. & Mendelow, A. (1988). Convincing top management of the strategic potential of information systems. *MIS Quarterly*, 12 (4): 524 – 534.
- Lederer, A. & Putnam, P. (1986). Connecting systems objectives to business strategy with BSP. *Information Strategy: The Executive's Journal*, 2(2): 12-18.
- Lederer, A. & Salmela, H. (1996). Toward a theory of strategic information systems planning. *Journal of Strategic Information Systems*, 5: 237-253.
- Lederer, A. & Sethi, V. (1988). The implementation of strategic information systems planning methodologies. *MIS Quarterly*, 12(3): 445-461.
- Lederer, A. & Sethi, V. (1991). Critical dimensions of strategic information systems planning. *Decision Sciences*, 22(1): 104-119.

- Lederer, A. & Sethi, V. (1992). Root causes of strategic information systems planning problems. *Journal of Management Information Systems*, 9(1): 25-45.
- Lederer, A. & Sethi, V. (1996). Key prescriptions for strategic information systems planning. *Journal of Management Information Systems*, 13(1): 35-62.
- Lederer, A. & Sethi, V. (1998). Seven guidelines for strategic information systems planning. *Information Strategy: The Executive's Journal*, 15(1): 23-29.
- Legris, P., Ingham, J. & Colletette, P. (2003). Why do people use information technology? A critical review of the technology acceptance model. *Information & Management*, 40: 191 – 204.
- Le Roux, D. C. (2001). Towards understanding dissatisfaction with explanations of IT value. *Unpublished PhD Thesis*. University of Pretoria.
- Locke, K. (2001). *Grounded Theory in Management Research*. Sage, London.
- Locke, K. & Golden-Biddle, K. (1997). Constructing opportunities for contribution: Structuring intertextual coherence and 'problematising' in organisational studies. *Academy of Management Journal*, 40(5): 1023 – 1062.
- Lowry, P., Romans, D. & Curtis, A. (2004). Global journal prestige and supporting disciplines: A scientometric study of information systems journals, *Journal of the Association for Information Systems*, 5(2): 29 – 77.
- Luftman, J. & McLean, E. (2004). Key issues for IT executives. *MIS Quarterly Executive*, 3(2): 89 – 104.
- Manyika, J. & Nevens, M. (2002). Technology after the bubble. *McKinsey Quarterly*, 4: 17 – 27.
- McFarlan, F., McKenney, J. & Pyburn, P. (1983). The information archipelago - plotting a course. *Harvard Business Review*, 61(1): 145-156.
- McGrath, G., Dampney, C. & More, E. (1994). Planning for information systems integration: Some key challenges. *Journal of Information Science*, 20(3): 149-160.
- Mentzas, G. (1997). Implementing an IS strategy - A team approach. *Long Range Planning*, 30(1): 84-95.
- Min, S. & Kim, S. (1999). An integrated approach toward strategic information systems planning. *Journal of Strategic Information Systems*, 8: 373-394.
- Mingers, J. (2001). Combining IS research methods: Towards a pluralist methodology. *Information Systems Research*, 12(3): 240 – 259.

- Mingers, J. (2003). A critique of statistical modelling from a critical realist perspective. *Proceedings of the 11th European Conference on Information Systems*, 19 – 21 June, Naples, Italy.
- Moffitt, M. & Peppet, S. (2004). Action Science and Negotiation. *Marquette Law Review*, 87: 649 – 654.
- Niederman, F., Brancheau, J. C. & Wetherbe, J. C. (1991) Information systems management issues in the 1990's. *MIS Quarterly*, 15(4): 475-500.
- Nutley, S. & Davies, H. (2001). Developing organisational learning in the NHS. *Medical Education*, 35: 35 – 42.
- O' Connor, A. (1993). Successful strategic information systems planning. *Journal of Information Systems*, 3: 71-83.
- Orlikowski, W. (1993). CASE tools as organisational change: Investigating incremental and radical change in systems development. *MIS Quarterly*, 17 (3): 309 – 340.
- Orlikowski, W. & Baroudi, J. (1991). Studying IT in organisations: research approaches and assumptions, *Information Systems Research*, 2(1): 1 – 28.
- Ormerod, R. (1996). Putting soft OR methods to work: Information systems strategy development at Richard's Bay. *Journal of the Operational Research Society*, 47(9): 1083-1097.
- Palvia, P., Mao, E., Salam, A. & Soliman, K. (2003). Management information systems research: What's there in a methodology? *Communications of the Association for Information Systems*, 11: 289 – 309.
- Pandit, N. (1996). The creation of theory: A recent application of the grounded theory method. *The Qualitative Report*, 2(4): 1 – 13, URL: <http://www.nove.edu/ssss/QR/QR2-4/pandit.html>. Accessed: 18th November, 2004.
- Pant, S. & Hsu, C. (1999). An integrated framework for strategic information systems planning and development. *Information Resources Management Journal*, 12(1): 15-25.
- Pant, S. & Ravichandran, T. (2001). A framework for information systems planning for e-business. *Logistics Information Management*, 14(1): 85-98.
- Paré G. (2004). Investigating information systems with positivist case study research. *Communications of the Association for Information Systems*, 13: 233 – 264.

- Paul, M. (2003). Double-loop diversity: Applying adult learning theory to the cultivation of diverse educational climates in higher education. *Innovative Higher Education*, 28(1): 35 – 47.
- Pavri, F. & Ang, J. (1995). A study of the strategic planning practices in Singapore. *Information & Management*, 28(1), 33-47.
- Periasamy, K. (1993). The state and status of information architecture: An empirical investigation. *Proceedings of the 14th International Conference on Information Systems*, Orlando: 255-270.
- Periasamy, K. & Feeny, D. (1997). Information architecture practice: Research-based recommendations for the practitioner. *Journal of Information Technology*, 12(3): 197-205.
- Pervan, G. (1997) Information systems management: An Australasian view of the key issues – 1996. *Australian Journal of Information Systems*, 5(1): 1 – 25.
- Pimchangthong, D., Plaisent, M. & Prosper, B. (2003). Key issues in information systems management: a comparative study of academics and practitioners in Thailand, *Journal of Global Information Technology Management*, 6(4): 27 – 44.
- Plouffe, C., Hulland, J. & Vandenbosch, M. (2001). Research report: Richness versus parsimony in modeling technology adoption decisions – Understanding merchant adoption of a smart card-based payment system. *Information Systems Research*, 12(2): 208 – 222.
- Polanyi, M. (1966). *The Tacit Dimension*, Peter Smith, Gloucester.
- Porter, M. & Millar, V. (1985). How information gives you competitive advantage. *Harvard Business Review*, 63(4): 149-160.
- Pozzebon, M. (2004). Conducting and evaluating critical interpretive research: Examining criteria as a key component in building a research tradition, in *Information Systems Research. Relevant Theory and Informed Practice* (Eds: B. Kaplan, D. Truex III, D. Wastell, A. Wood-Harper, J. DeGross), Kluwer Academic Publishers, Boston.
- Premkumar, G. & King, W. (1991). Assessing strategic information systems planning. *Long Range Planning*, 24(5): 41-58.
- Premkumar, G. & King, W. (1992). An empirical assessment of information systems planning and the role of information systems in organisations. *Journal of Management Information Systems*, 9(2): 99-125.

- Premkumar, G. & King, W. (1994). Organisational characteristics and information systems planning: An empirical study. *Information Systems Research*, 5(2), 75-109.
- Ranganathan, C. & Sethi, V. (2000). External IT environment: Dimensionality and measurement, *Proceedings of the 21st International Conference on Information Systems*, Brisbane, Australia: 594 - 600.
- Ranganathan, C. & Sethi, V. (2002). Rationality in strategic information technology decisions: The impact of shared domain knowledge and IT unit structure. *Decision Sciences*, 33(1): 59-86.
- Reich, B. & Benbasat, I. (1996) Measuring the linkage between business and information technology objectives, *MIS Quarterly*, 20(1): 55-79.
- Reich, B. & Benbasat, I. (2000). Factors that influence the social component of alignment between business and information technology objectives. *MIS Quarterly*, 24(1): 81-113.
- Sabherwal, R. (1999). The relationship between information system planning sophistication and information system success. *Decision Sciences*, 30(1): 137-167.
- Sabherwal, R. & King, W. (1992). Decision processes for developing strategic applications of information systems: A contingency approach. *Decision Sciences*, 23(4): 917-943.
- Sabherwal, R. & King, W. (1995). An empirical taxonomy of the decision-making processes concerning strategic applications of information systems. *Journal of Management Information Systems*, 11(1): 177-214.
- Salmela, H. & Spil, T. (2002). Dynamic and emergent information systems strategy formulation and implementation. *International Journal of Information Management*, 22: 441-460.
- Salmela, H., Lederer, A. & Reponen, T. (2000). Information systems planning in a turbulent environment. *European Journal of Information Systems*, 9(1): 3-15.
- Sahraoui, S. (2003). Learning through planning: Conceptual definition, and empirical validation of a planning culture construct, *Journal of End-User Computing*, 15(2): 37 – 53.
- Saunders, M., Lewis, P. & Thornhill, A. (2000). *Research Methods for Business Students* (2nd Ed.) Prentice Hall, Harlow.
- Scott, R. (1969). *The Making of Blind Men*. Russell Sage Foundation, New York.

- McLean, E. & Soden, J. (1977). *Strategic Planning for MIS*, Wiley & Sons, New York.
- Segars, A. & Grover, V. (1998). Strategic information systems planning success: An investigation of the construct and its measurement. *MIS Quarterly*, 23(2): 139-163.
- Segars, A. & Grover, V. (1999). Profiles of strategic information systems planning. *Information Systems Research*, 10(3): 199-232.
- Segars, A., Grover, V. & Teng, J. (1998). Strategic information systems planning: Planning system components, internal co alignment, and implications for planning effectiveness. *Decision Sciences*, 29(2): 303-344.
- Senge, P. (1990). *The Fifth Discipline*, Random House, Sydney.
- Sillince, J. & Frost, C. (1995). Operational, environmental, and managerial factors in non-alignment of business strategies and IS strategies for the Police Service in England and Wales. *European Journal of Information Systems*, 4(2): 103-115.
- Shank, M., Boynton, A. & Zmud, R. (1985). Critical success factor analysis as a methodology for MIS planning. *MIS Quarterly*, 9(2): 121-129.
- Shanks, G. (1997). The challenges of strategic data planning in practice: An interpretive case study, *Journal of Strategic Information Systems*, 6: 69 – 90.
- Spewak, S. & Hill, S. (1992). *Enterprise Architecture Planning: Developing a Blueprint for Data, Applications, and Technology*. Wiley & Sons, New York.
- Strauss, A. & Corbin, J. (1990). *The Basics of Qualitative Research: Techniques and Procedures for Developing Grounded Theory* (1st Ed.). Sage, London.
- Strauss, A. & Corbin, J. (1998). *The Basics of Qualitative Research: Techniques and Procedures for Developing Grounded Theory* (2nd Ed.). Sage, London.
- Tang, J. & Tang, M. (1996). A study of information systems planning and its effectiveness in Taiwan. *International Journal of Information Management*, 16(6): 429-436.
- Teo, T. & Ang, J. (2001). An examination of major IS planning problems. *International Journal of Information Management*, 21: 457-470.
- Teo, T. & King, W. (1996). Assessing the impact of integrating business planning and IS planning. *Information & Management*, 30(6): 309-321.
- Teo, T. & King, W. (1997). Integration between business planning and information systems planning: An evolutionary-contingency perspective. *Journal of Management Information Systems*, 14(1): 185-214.

- Teo, T. & King, W. (1999). An empirical study of the impacts of integrating business planning and information systems planning. *European Journal of Information Systems*, 8: 200 – 210.
- Teo, T., Ang, J. & Pavri, F. (1997). The state of strategic IS planning practices in Singapore. *Information & Management*, 33: 13-23.
- Tsangaridou, N. & O' Sullivan, M. (2003). Physical education teachers' theories of action and theories in use. *Journal of Teaching in Physical Education*. 22:132 – 152.
- Urquhart, C. (2002). Regrounding grounded theory – or reinforcing old prejudices? A brief reply to Bryant, *Journal of Information Technology Theory and Application*, 4(3): 43 – 54.
- Van Der Zee, J. & De Jong, B. (1999). Alignment is not enough: Integrating business and information technology management with the balanced business scorecard. *Journal of Management Information Systems*, 6(2): 137-157.
- Walsham, G. & Waema, T. (1994). Information systems strategy and implementation: A case study of a building society, *ACM Transactions on Information Systems*, 12(2): 150 – 173.
- Ward, J. Griffiths, P. & Whitmore, P. (1990). *Strategic Planning for Information Systems*. Wiley & Sons, Chichester.
- Ward, J. & Peppard, J. (2002). *Strategic Planning for Information Systems* (3rd Ed.). Wiley & Sons, Chichester.
- Watson, R., Kelly, G., Galliers, R. & Brancheau, J. (1997). Key issues in information systems management: An international perspective, *Journal of Management Information Systems*, 13(4): 91-115.
- Weber, R. (2003). Editor's Comments. Theoretically speaking, *MIS Quarterly*, 27(3): iii – xii.
- Whetten, D. (1989). What constitutes a theoretical contribution? *Academy of Management Review*, 14(4): 490 – 495.
- Yeates D, Shields, M. & Helmy, D. (1994). *Systems Analysis and Design*, Pitman, London.

APPENDICES

Appendix 1: MMTTs in SISP (Listed Alphabetically)

B

- Balanced Business Score Card (Van Der Zee & De Jong, 1999)
- Business Information Analysis and Integration Technique - BIAIT (in Bowman, Davis & Wetherbe, 1983)
- Business Information Characterisation Study (in Lederer & Sethi, 1988).
- Business Process Reengineering (Baker, 1995).
- Business Systems Planning Methodology - BSP (McFadden & Hoffer 1991, Lederer & Sethi, 1992).

C

- Chargeout Technique (Bowman et al., 1983)
- Control Objectives for Information and Related Technology - COBIT
- Cognitive Mapping (Eden, 1989)
- Competitive Forces Analysis (Goldsmith, 1991)
- Cost-Benefit Analysis (Shoval & Giladi, 1996)
- Cost-Benefit Graph (Shoval & Giladi, 1996)
- Change Management (Baker, 1995)
- Critical Success Factor Analysis – CSFs (in Shank *et al.*, 1985)
- Critical Value Activity Analysis (Chu, 1995)
- Customer Resource Lifecycle (in Lederer & Sethi, 1988)

D

- Data Flow Diagrams - DFDs (in Lederer & Sethi, 1996)

E

- Ends/Means Analysis (Bowman *et al.*, 1983)
- Entity-Relationship Models (in Lederer & Sethi, 1996)

F

- Four Cycles Method (Salmela & Spil, 2002)

G

- Group Support Systems (Quaddus, 1996)

H

- Hierarchical Systems Planning (McLean & Soden, 1977 in Shoval & Giladi, 1996)

I

- Information Engineering Methodology – IE (Martin, 1989)
- Information Quality Analysis (in Lederer & Sethi, 1988)
- Interactive Planning (in Ormerod, 1996)
- Interviewing Technique (in Premkumar & King, 1991)
- IT Audit Grid (in Galliers, 1991)
- Information Technology Infrastructure Library – ITIL

M

- Method/1 (in Lederer & Salmela, 1996)
- Multiple Methodologies (Ormerod 1996, Goldsmith 1991)

N

- Nolan Norton Methodology (in Lederer & Sethi, 1988)

O

- Organisational Learning (Senge, 1990, in Baker, 1995)

P

- Portfolio Management (McFarlan *et al.*, 1983)
- Project Management (Baker, 1995)
- PROPlanner (in Lederer & Sethi, 1992)
- Process Data Matrices (Lederer & Sethi, 1996)
- Process Diagrams (Lederer & Sethi, 1996)

R

- Return on Investment Analysis- ROI (Bowman *et al.*, 1983)

S

- Soft Systems Methodology – SSM (Checkland, 1989)
- Stages of Growth Analysis (Galliers, 1991)
- Stakeholder Analysis (Galliers, 1987)
- Strategic Information Systems Planning (in Henderson *et al.* 1985)
- Strategic Choice (in Ormerod, 1996)
- Strategic Options Development Analysis – SODA (Eden, 1989)
- Strategic Systems Planning (in Shoval & Giladi, 1996)
- Strategic Thrusts Technique (in Galliers, 1987)
- Strategy Set Transformation – SST (in Bowman *et al.*, 1983)
- System Dynamics (Quaddus, 1996)

V - Z

- Value-Chain Analysis (Porter & Millar, 1985)
- Workshop Technique (Galliers *et al.*, 1994)
- Zero-Based Budgeting Technique (Bowman *et al.*, 1983)

***Additional References**

- Bowman, B, Davis, G. & Wetherbe, J. (1983). Three stage model of MIS planning. *Information and Management*, 6:11-25.
- Goldsmith, N. (1991). Linking IT planning to business strategy. *Long Range Planning*, 24(6): 67-77.
- Henderson, J, Rockart, J. & Sifonis, J. (1985). Integrating management support systems into strategic information systems planning. *Journal of Management Information Systems*. 4(1): 5 – 24.
- Martin, 1989. *Information Engineering, Book1: Introduction*, Prentice Hall, Englewood Cliffs.
- McFadden, F. R. & Hoffer, J. A. (1991) *Database Management* (3rd ed.). Benjamin/Cummins, Redwood City.
- Quaddus, M. (1996) GSS supported system dynamics: A model for IT planning, *Australian Systems Thinking Conference*, 29 Sep – 2 Oct, Melbourne, Australia: Quaddus 1 – Quaddus 10.
- Shoval, P. & Giladi, R. (1996) Determination of an implementation order for IS projects, *Information and Management*, 31: 67-74.

* Not in main Reference list.

Appendix 2: Empirical Articles Examined in Quantitative Meta-analysis (1991 – 2002)

Sample articles
Aladwani, A. (2001) IT Planning effectiveness in a developing country. <i>Journal of Global Information Technology Management</i> , 4(3): 0-0.
Ang, J. & Quek, S. (1999) Modeling IS planning benefits using ACE. <i>Decision Sciences</i> , 30(2): 533-562.
Ang, J. & Teo, T. (1997) CSFs and sources of assistance and expertise in strategic IS planning: a Singapore perspective. <i>European Journal of Information Systems</i> , 6(3): 164-171.
Baets, W. (1996) Some empirical evidence on IT strategy alignment in banking. <i>Information & Management</i> , 30(4): 155-177.
Bajally, S. (1998) Strategic information systems planning in the public sector. <i>American Review of Public Administration</i> , 28(1): 75-85.
Basu, V., Hartono, V., Lederer, A. & Sethi, V. (2002) The impact of organisational commitment, senior management involvement and team involvement on strategic information systems planning. <i>Information & Management</i> , 39(): 513-524.
Benamati, J. & Lederer, A. (2001) Rapid information technology change, coping mechanisms and the emerging technologies group. <i>Journal of Management Information Systems</i> , 17(4): 183-202.
Bergeron, F., Buteau, C. & Raymond, L. (1991) Identification of strategic information systems opportunities: Applying and comparing two methodologies. <i>MIS Quarterly</i> , 15(1): 99-103.
Broadbent, M., Weill, P. & Neo, B. (1999) Strategic context and patterns of IT infrastructure capability. <i>Journal of Strategic Information Systems</i> , 8(): 157-187.
Burn, J. & Szeto, C. (2000) A comparison of the views of business and IT management on success factors for strategic alignment. <i>Information & Management</i> , 37(0): 197-216.
Byrd, T., Sambamurthy, R. & Zmud, R. (1995) An examination of IT planning in a large, diversified public organisation. <i>Decision Sciences</i> , 26(1): 49-74.
Chan, Y. & Huff, S. (1993) Strategic information systems alignment. <i>Business Quarterly</i> , 58(1): 51-55.
Chan, Y. Huff, S. & Copeland, D. (1998) Assessing realised information systems strategy. <i>Journal of Strategic Information Systems</i> , 6(0): 273-298.
Chan, Y., Huff, S., Barclay, D. & Copeland, D. (1997) Business strategic orientation, information systems strategic orientation and strategic alignment. <i>Information Systems Research</i> , 8(2): 125-150.
Codington, S. & Wilson, T. (1994) Information systems strategies in the UK insurance industry. <i>International Journal of Information Management</i> , 14(3): 188-203.
Cohen, J. (2002) Information systems strategic planning and IS function performance: An empirical study. <i>South African Computer Journal</i> , 28(): 44-53.
Conrath, D., Ang, J. & Mattay, S. (1992) Strategic planning for information systems: a survey of Canadian organisations. <i>INFOR</i> , 30(4): 364-378.
Doherty, N., Marples, C. & Suhaimi, A. (1999) The relative success of alternative approaches to strategic information systems planning: an empirical analysis. <i>Journal of Strategic Information Systems</i> , 8(): 263-283.
Earl, M. (1993) Experiences in strategic information systems planning. <i>MIS Quarterly</i> , 17(1): 1-21.
Ferguson, C., Watson, H. & Gatewood, R. (1991) Strategic planning for office automation. <i>Information & Management</i> , 21(3): 201-215.
Finnegan, P., Galliers, R. & Powell, P. (1999) Inter-organisational systems planning: learning from current practices <i>International Journal of Technology Management</i> , 17(1): 129-144.
Flynn, D. & Goleniewska, E. (1993) A survey of the use of strategic information systems planning

Sample articles
approaches in UK organisations. <i>Journal of Strategic Information Systems</i> , 2(4): 292-319.
Gottschalk, P. (1999) Implementation of formal plans: the case of information technology strategy. <i>Long Range Planning</i> , 32(3): 362-.
Gottschalk, P. (1999) Implementation predictors of strategic information systems plans. <i>Information & Management</i> , 36(): 77-91.
Gottschalk, P. (1999) Strategic information systems planning: the IT strategy implementation matrix. <i>European Journal of Information Systems</i> , 8(2): 107-118.
Hackney, R. & Kawalek, J. (1999) Strategic information systems planning: Perspectives on the role of the 'end-user' revisited. <i>Journal of End User Computing</i> , 11(2): 3-12.
Hagmann, H. & McCahon, C. (1993) Strategic information systems and competitiveness. <i>Information & Management</i> , 25: 183-192.
Hann, J & Weber, R. (1996) Information systems planning: A model and empirical tests. <i>Management Science</i> , 42(7): 1043-1064.
Jiang, J. & Klein, G. (1999) Project selection criteria by strategic orientation. <i>Information & Management</i> , 36(2): 63-75.
Kearns, G. & Lederer, A. (2000) The effect of strategic alignment on the use of IS-based resources for competitive advantage. <i>Journal of Strategic Information Systems</i> , 9: 265-293.
King, W. & Teo, T. (1997) Integration between business planning and information systems planning: Validating a stage hypothesis model. <i>Decision Sciences</i> , 28(2): 279-308.
King, W. & Teo, T. (2000) Assessing the impact of proactive versus reactive modes of strategic information systems planning OMEGA - <i>International Journal of Management Science</i> , 28(6): 667-679.
Kunnathur, A. & Shi, Z (2001) An investigation of the strategic information systems planning success in Chinese publicly traded firms. <i>International Journal of Information Management</i> , 21(6): 423-437.
Larsen, P., Tonge, R. & Roberts, M. (2001) Exploring IS planning in high-growth medium-sized enterprises. <i>Journal of General Management</i> , 26(3): 76-89.
Lederer, A. & Sethi, V. (1991) Critical dimensions of strategic information systems planning. <i>Decision Sciences</i> , 22(1): 104-119.
Lederer, A. & Sethi, V. (1992) Meeting the challenges of information systems planning. <i>Long Range Planning</i> , 25(2): 69-80.
Lederer, A. & Sethi, V. (1992) Root causes of strategic information systems planning problems. <i>Journal of Management Information Systems</i> , 9(1): 25-45.
Lederer, A. & Sethi, V. (1996) Key prescriptions for strategic information systems planning. <i>Journal of Management Information Systems</i> , 13(1): 35-62.
Neumann, S., Ahituv, S. & Zviran, M. (1992) A measure for determining the strategic relevance of IS to their organisation. <i>Information & Management</i> , 22(5): 281-299.
Pavri, F. & Ang, J. (1995) A study of the strategic planning practices in Singapore. <i>Information & Management</i> , 28(1): 33-47.
Philip, G., Gopalakrishnan, M. & Mawalkar, S. (1995) Technology management and IT strategy: Preliminary results of an empirical study of Canadian organisations. <i>International Journal of Information Management</i> , 15(4): 303-315.
Premkumar, G. & King, W. (1991) Assessing strategic information systems planning. <i>Long Range Planning</i> , 24(5): 41-58.
Premkumar, G. & King, W. (1992) An empirical assessment of information systems planning and the role of information systems in organisations. <i>Journal of Management Information Systems</i> , 9(2): 99-125.
Premkumar, G. & King, W. (1994) Organisational characteristics and information systems planning: An empirical study. <i>Information Systems Research</i> , 5(2): 75-109.
Raghunathan, B. & Raghunathan, T. (1994) Adaptation of a planning system success model to information systems planning. <i>Information Systems Research</i> , 5(3): 326-340.

Sample articles
Raghunathan, B. Raghunathan, T. & Tu, Q. (1999) Dimensionality of the strategic grid framework: The construct and its measurement. <i>Information Systems Research</i> , 10(4): 343-355.
Ranganathan, C. & Sethi, V. (2002) Rationality in strategic information technology decisions: The impact of shared domain knowledge and IT unit structure. <i>Decision Sciences</i> , 33(1): 59-86.
Reich, B. & Benbasat, I. (1996) Measuring the linkage between business and information technology objectives. <i>MIS Quarterly</i> , 20(1): 55-78.
Reich, B. & Benbasat, I. (2000) Factors that influence the social dimension of alignment between business and information technology objectives. <i>MIS Quarterly</i> , 24(1): 81-113.
Reponen, T., Parnisto, J. & Viitanen, J. (1996) Personality's impact on information management strategy formulation. <i>European Journal of Information Systems</i> , 5(): 161-171.
Sabherwal, R. & Chan, Y. (2001) Alignment between business and IS strategies: A study of prospectors, analyzers, and defenders. <i>Information Systems Research</i> , 12(1): 11-33.
Sabherwal, R. & King, W. (1992) Decision processes for developing strategic applications of information systems: A contingency approach. <i>Decision Sciences</i> , 23(4): 917-943.
Sabherwal, R. & King, W. (1995) An empirical taxonomy of the decision-making processes concerning strategic applications of information systems. <i>Journal of Management Information Systems</i> , 11(1): 177-214.
Sabherwal, R. (1999) The relationship between information system planning sophistication and information system success. <i>Decision Sciences</i> , 30(1): 137-167.
Segars, A. & Grover, V. (1998) Strategic information systems planning success: An investigation of the construct and its measurement. <i>MIS Quarterly</i> , 23(2): 139-163.
Segars, A. & Grover, V. (1999) Profiles of strategic information systems planning. <i>Information Systems Research</i> , 10(3): 199-232.
Segars, A., Grover, V. & Teng, J. (1998) Strategic information systems planning: planning system dimensions, internal co alignment, and implications for planning effectiveness. <i>Decision Sciences</i> , 29(2): 303-344.
Tang, J. & Tang, M. (1996) A study of information systems planning and its effectiveness in Taiwan. <i>International Journal of Information Management</i> , 16(6): 429-436.
Teo, T. & Ang, J. (1999) Critical success factors in the alignment of IS plans with business plans. <i>International Journal of Information Management</i> , 19(2): 173-185.
Teo, T. & Ang, J. (2001) An examination of major IS planning problems. <i>International Journal of Information Management</i> , 21(): 457-470.
Teo, T. & King, W. (1996) Assessing the impact of integrating business planning and IS planning. <i>Information & Management</i> , 30(6): 309-321.
Teo, T. & King, W. (1997) An assessment of perceptual differences between informants in information systems research. <i>OMEGA - International Journal of Management Science</i> , 25(5): 557-566.
Teo, T. & King, W. (1997) Integration between business planning and information systems planning: An evolutionary-contingency perspective. <i>Journal of Management Information Systems</i> , 14(1): 185-214.
Teo, T. & King, W. (1999) An empirical study of the impacts of integrating business planning and information systems planning. <i>European Journal of Information Systems</i> , 8(3): 200-210.
Teo, T., Ang, J. & Pavri, F. (1997) The state of strategic IS planning practices in Singapore. <i>Information & Management</i> , 33(): 13-23.
Tukana, S. & Weber, R. (1996) An empirical test of the strategic-grid model of information systems planning. <i>Decision Sciences</i> , 27(4): 735-765.

Appendix 3: Quantitative Meta-analysis

From:	To:			
<i>Planning Process</i>	<i>Planning Outcomes</i>	<i>Sample Size</i>	<i>Coefficient</i>	<i>References</i>
Quality	Effectiveness	245	0.50	Premkumar & King (1994)
Business Value Identification (Quality)	Effectiveness	105	0.45	Lederer & Sethi (1996, 1998)
Implementation Planning	Effectiveness	105	0.45	Lederer & Sethi (1998)
Alacrity	Effectiveness	105	0.47	Lederer & Sethi (1996, 1998)
Rational Adaptation	Effectiveness	253	0.51	Segars <i>et al.</i> (1998)
Quality	IS Function performance	245	Sig	Premkumar & King (1991)
Emphasis	IS Function Performance	100	0.45	Cohen (2002)
BP-ISP Integration	No of IT infrastructure services	26	0.64	Broadbent <i>et al.</i> (1999)
BP-ISP Integration	Reach and range of IT infrastructure	26	0.43	Broadbent <i>et al.</i> (1999)
Quality	IS contribution to Orgn. Performance	245	Sig	Premkumar & King (1991)
BP-ISP Integration	IS contribution to Orgn. Performance	157	0.35	Teo & King (1996)
Comprehensiveness	IS Strategic Orientation	237	0.26	Bajally (1998)
BP-ISP Integration	Short-term Social alignment	10	Case	Reich & Benbasat (2000)
Extent of IS Strategic Plg.	User Satisfaction	123	0.22	Tang & Tang (1996)
Extent of Systems Plg.	User Satisfaction	123	(0.09)	Tang & Tang (1996)
Rational Adaptation	Success	253	0.51	Segars & Grover (1999)
Organisational Approach	Success	27	Case	Earl (1993)
Organisational Approach	Success (in Turbulence)	2	AR	Salmela <i>et al.</i> (2000)

Organisational Approach	Success	267	3.8 to 16.8 (ANOVA)	Doherty <i>et al.</i> (1999)
Planning Process	Planning Process	Sample Size	Coefficient	
Orgn. (Process) Problems	Cost (Process) Problems	80	0.53	Lederer & Sethi (1992)
BP-ISP Integration	Cost (Process) Problems	157	(-0.06)	Teo & King (1996)
BP-ISP Integration	Orgn. (Process) Problems	157	-0.39	Teo & King (1996)
Extent of IS Strategic Plg.	Extent of IS Systems Plg.	123	0.84	Tang & Tang (1996)
Planning Process	Information Plan	Sample Size	Coefficient	
Process Quality	Plan quality	245	0.73 (Reg)	Premkumar & King (1991)
Snr Mgt Control of SISP	Snr Mgt goals in plan	112	0.25	Hann & Weber (1996)
Orgn. (Process) Problems	HW (Plan) Problems	80	0.47	Lederer & Sethi (1992)
BP-ISP Integration	HW (Plan) Problems	157	-0.29	Teo & King (1996)
Orgn. (Process) Problems	Database (Plan) Problems	80	0.68	Lederer & Sethi (1992)
BP-ISP Integration	Database (Plan) Problems	157	-0.32	Teo & King (1996)
Internal Environment	Planning Process	Sample Size	Coefficient	
Orgn. Size (Employees)	Existence	138	7.49 (Chi)	Conrath <i>et al.</i> (1992)
Orgn. Size (Employees)	Existence	70	9.32 (Chi)	Pavri & Ang (1995)
Orgn. Size (Employees)	Existence	58	9.69 (Chi)	Teo <i>et al.</i> (1997)
Orgn. Size (Revenue)	Existence	70	12.26 (Chi)	Pavri & Ang (1995)
Orgn. Size (Revenue)	Existence	58	16.53 (Chi)	Teo <i>et al.</i> (1997)
Orgn. Size (Op. Exp.)	Existence	58	8.6 (Chi)	Teo <i>et al.</i> (1997)
IS function size (Budget)	Existence	138	14.16 (Chi)	Conrath <i>et al.</i> (1992)
IS function size (Budget)	Existence	70	12.75 (Chi)	Pavri & Ang (1995)
IS function size	Existence	58	13.09 (Chi)	Teo <i>et al.</i> (1997)

(Budget)				
IS function size (Employ)	Existence	138	9.45 (Chi)	Conrath <i>et al.</i> (1992)
IS function size (Employ)	Existence	70	6.91 (Chi)	Pavri & Ang (1995)
IS function size (Employ)	Existence	58	14.21 (Chi)	Teo <i>et al.</i> (1997)
Op. Orgn. Struct.	Existence	58	9.87 (Chi)	Teo <i>et al.</i> (1997)
SBP Quality	Quality	245	0.19	Premkumar & King (1994)
Role of IS	Quality	245	0.33	Premkumar & King (1994)
SBU Integration	Sophistication	236		Sabherwal (1999)
IT Capability	Sophistication	236		Sabherwal (1999)
Role of IS	BP-ISP Integration	249	4.4 (t)	Premkumar & King (1992)
InfoIntens PDT	BP-ISP Integration	157	0.19	Teo & King (1997)
InfoIntens VC	BP-ISP Integration	157	0.17	Teo & King (1997)
Formalisation	Analysis	81	(0.15)	Sabherwal & King (1992)
Formalisation	Planning	81	(0.17)	Sabherwal & King (1992)
Formalisation	Rationality	223	0.15	Ranganathan & Sethi (2002)
Formalisation	Politics	81	(0.06)	Sabherwal & King (1992)
Centralisation	Analysis	81	(-0.07)	Sabherwal & King (1992)
Centralisation	Planning	81	(0.06)	Sabherwal & King (1992)
Centralisation	Rationality	223	(0.12)	Ranganathan & Sethi (2002)
Centralisation	Politics	81	(0.07)	Sabherwal & King (1992)
IS Maturity	Analysis	81	0.28	Sabherwal & King (1992)
IS Maturity (Role of IS)	IS Project Eval criteria	88		Jiang & Klein (1999)
IS Maturity	Planning	81	(0.14)	Sabherwal & King (1992)
IS Maturity	Politics	81	(-0.07)	Sabherwal & King (1992)
BP horizon	ISP Horizon	18	-	Flynn & Goleniewska (1992)
Role of IS	ISP Horizon	245	2.76 (t)	Premkumar & King (1992)
Complexity	Level of agreement	8	-	Byrd <i>et al.</i> (1995)

(Stakeholders)				
Internal Environment	Outcomes	Sample Size	Coefficient	
SBP Quality	Effectiveness	245	0.18	Premkumar & King (1994)
Role of IS	Effectiveness	245	0.35	Premkumar & King (1994)
Role of IS	IS contribution to Orgn. Performance	245	2.52 (t)	Premkumar & King (1992)
IS Strategic Orient.	IS contribution to Orgn. Performance	164	-0.07	Chan <i>et al.</i> (1997)
Planning Process	Plan Implementation	Sample Size	Coefficient	
Quality	IM Quality	245	0.44	Premkumar & King (1994)
BP-ISP Integration	Implement. Problems	157	-0.36	Teo & King (1996)
Cost (Process) Problems	Implement. Problems	80	0.36	Lederer & Sethi (1992)
IS Strategic Planning	IS Implementation	123	0.79	Tang & Tang (1996)
IS Systems Planning	IS Implementation	123	0.84	Tang & Tang (1996)
Information Plan	Plan Implementation	Sample size	Coefficient	
Description of Responsibility	Implementation extent	151	0.23 (Reg)	Gottschalk (1999a)
Description of User Involvement	Implementation extent	151	0.30 (Reg)	Gottschalk (1999a)
Information Plan	Outcomes	Sample Size	Coefficient	
Plan quality	Effectiveness	245	0.33 (Reg)	Premkumar & King (1991)
Plan quality	IS Function performance	245	Sig.	Premkumar & King (1991)
Plan quality	IS contribution to Orgn. Performance	245	Sig	Premkumar & King (1991)
Information Plan	Information Plan	Sample Size	Coefficient	
Snr Mgt goals in plan	Plan Usefulness	112	0.16	Hann & Weber (1996)
Plan Implementation	Outcomes	Sample Size	Coefficient	
IM Quality	Effectiveness	245	0.4	Premkumar & King (1994)
Implementation tracking	No of IT infrastructure services	26	0.42	Broadbent <i>et al.</i> (1999)
Implementation	Reach and range of IT	26	0.34	Broadbent <i>et al.</i> (1999)

tracking	infrastructure			
IS Implementation	User Satisfaction	123	(0.08)	Tang & Tang (1996)
Resources	Outcomes	Sample Size	Coefficient	
Personality	Outcomes	20	Lab	Reponen <i>et al.</i> (1996)
Resource Quality	Effectiveness	245	0.47	Premkumar & King (1994)
Resource Quality (TM Understanding)	Effectiveness	245	0.46	Lederer & Sethi (1998)
Facilitation Mechanisms	Effectiveness	245	0.32	Premkumar & King (1994)
TM Involvement	Effectiveness	105	0.34 (reg)	Basu <i>et al.</i> (2002)
Team Involvement	Effectiveness	105	(0.21) (reg)	Basu <i>et al.</i> (2002)
Orgn Commitment	Effectiveness	105	(0.16) (reg)	Basu <i>et al.</i> (2002)
Orgn. Commitment	IS Function Performance	100	0.40	Cohen (2002)
Integration Mechanisms	IS Function Performance	100	0.23	Cohen (2002)
Comms between Bus & IT Execs.	Short-term social alignment	10	Case	Reich & Benbasat (2000)
Short-term Bus. Direction	Short-term social alignment	10	Case	Reich & Benbasat (2000)
Long-term Bus. Direction	Long-term social alignment	10	Case	Reich & Benbasat (2000)
Shared Domain Knowledge	Long-term social alignment	10	Case	Reich & Benbasat (2000)
CEO Part. In ISP	BP-ISP Align (Impact)	107	0.16	Kearns & Lederer (1997)
IS Exec Part. In BP	BP-ISP Align (Impact)	107	0.51	Kearns & Lederer (1997)
CEO Part. In ISP	ISP - BP Align (Align)	107	0.39	Kearns & Lederer (1997)
IS Exec Part. In BP	ISP - BP Align (Align)	107	0.34	Kearns & Lederer (1997)
Outcomes	Outcomes	Sample size	Coefficient	
Capability Improvement	Effectiveness	192	0.25	Raghunathan & Raghunathan (1994)
IS Strategic alignment	IS Contribution to Orgn Perform.	164	0.22	Chan <i>et al.</i> (1997)

IS Strategic alignment	Orgn Perform.	164	0.34	Chan <i>et al.</i> (1997)
Short-term social alignment	Short term intellectual alignment	10	(0.04)	Reich & Benbasat (1996)
Long-term social alignment	Long term intellectual alignment	10	(-0.08)	Reich & Benbasat (1996)
Self-reported short-term alignment	Short term social alignment	10	0.5	Reich & Benbasat (1996)
IT implementation success	Short term social alignment	10	Case	Reich & Benbasat (2000)
Self-reported long-term alignment	Long term social alignment	10	(0.21)	Reich & Benbasat (1996)
BP-ISP Align (Impact)	IS-based Comp. Adv.	107	0.62	Kearns & Lederer (1997)
ISP – BP Align (Align)	IS-based Comp. Adv.	107	0.14	Kearns & Lederer (1997)
Resources	Process	Sample Size	Coefficient	
Personality	Process	20	Lab	Reponen <i>et al.</i> (1996)
Informational Input	Quality	245	0.14 (Reg)	Premkumar & King (1991)
Resource Quality	Quality	245	0.44	Premkumar & King (1994)
FM Quality	Quality	245	0.31	Premkumar & King (1994)
Shared Domain Knowledge	Rationality	223	0.34	Ranganathan & Sethi (2002)
Snr Mgt Envir Uncertainty	Snr Mgt Control of SISP	112	0.18	Hann & Weber (1996)
Snr Mgt Task Uncertainty	Snr Mgt Control of SISP	112	-0.14	Hann & Weber (1996)
IS Mgr Length of Tenure	Snr Mgt Control of SISP	112	-0.26	Hann & Weber (1996)
Ease of assess. IS Mgr Perf.	Snr Mgt Control of SISP	112	-0.28	Hann & Weber (1996)
TM Perc of IT	BP-ISP Integration	157	0.29	Teo & King (1997)
Tech Comp of IS?	BP-ISP Integration	157	0.18	Teo & King (1997)
Bus Comp of IS?	BP-ISP Integration	157	0.32	Teo & King (1997)
Internal Environment	Resources	Sample	Coefficient	
SBP Quality	Resource Quality	245	0.23	Premkumar & King (1994)
Role of IS	Resource Quality	245	0.3	Premkumar & King

Appendices

				(1994)
Role of IS	SISP Resources	245	11.629 (Chi)	Premkumar & King (1992)
Centralisation	Shared Domain knowledge	223	-0.22	Ranganathan & Sethi (2002)
Formalisation	Shared Domain knowledge	223	0.26	Ranganathan & Sethi (2002)
SBP Quality	FM Quality	245	0.27	Premkumar & King (1994)
Role of IS	FM Quality	245	0.28	Premkumar & King (1994)
Centralisation	TM Influence	81	(0.09)	Sabherwal & King (1992)
Formalisation	TM Influence	81	(-0.04)	Sabherwal & King (1992)
IS Maturity	TM Influence	81	0.46	Sabherwal & King (1992)
Role of IS	TM Involvement	245	3.69 (t)	Premkumar & King (1992)
Information Intensity	CEO Part. In ISP	107	0.34	Kearns & Lederer (1997)
Information Intensity	IS Exec Part. In BP	107	0.35	Kearns & Lederer (1997)
Centralisation	IS Influence	81	(-0.1)	Sabherwal & King (1992)
Formalisation	IS Influence	81	(0.05)	Sabherwal & King (1992)
IS Maturity	IS Influence	81	0.26	Sabherwal & King (1992)
InfoIntens PDT	TM Perc of IT	157	0.18	Teo & King (1997)
InfoIntens VC	TM Perc of IT	157	0.43	Teo & King (1997)
InfoIntens PDT	Bus Comp of IS	157	(0.11)	Teo & King (1997)
InfoIntens VC	Bus Comp of IS	157	0.32	Teo & King (1997)
InfoIntens PDT	Tech Comp of IS	157	(0.09)	Teo & King (1997)
InfoIntens VC	Tech Comp of IS	157	0.33	Teo & King (1997)
Resource	Resource	Sample Size	Coefficient	
Resource Quality	FM Quality	245	0.53	Premkumar & King (1994)
Shared Domain Knowledge	Comms. Between Bus & IT Execs.	10	Case	Reich & Benbasat (1996)
Tech Comp of IS	TM Perc of IT	157	0.42	Teo & King (1997)
Bus Comp of IS	TM Perc of IT	157	0.51	Teo & King (1997)
Bus Comp of IS	Tech Comp of IS	157	0.39	Teo & King (1997)
Resources	Implementation	Sample Size	Coefficient	
Res. Quality	IM Quality	245	0.56	Premkumar & King (1994)

FM Quality	IM Quality	245	0.38	Premkumar & King (1994)
Internal Environment	Implementation	Sample size	Coefficient	
Role of IS	IM Quality	245	0.26	Premkumar & King (1994)
SBP Quality	IM Quality	245	0.22	Premkumar & King (1994)
Internal Environment	Internal Environment	Sample size	Coefficient	
Role of IS	IS Resources	245	23.3 (Chi)	Premkumar & King (1992)
SBP Quality	Role Of IS	245	0.16	Premkumar & King (1994)
InfoIntens VC	InfoIntens PDT	157	0.20	Teo & King (1997)
External Environment	Process	Sample size	Coefficient	
Changeability (Dyn.)	BP-ISP Integration	157	0.42	Teo & King (1997)
Predict. (Dyn.)	BP-ISP Integration	157	(0.15)	Teo & King (1997)
Heterogeneity	BP-ISP Integration	157	(-0.01)	Teo & King (1997)
Scarcity (Hostility)	BP-ISP Integration	157	(0.14)	Teo & King (1997)
Compete (Hostility)	BP-ISP Integration	157	(0.07)	Teo & King (1997)
Dynamism	Analysis	81	-0.32	Sabherwal & King (1992)
Hostility	Analysis	81	(0.05)	Sabherwal & King (1992)
Heterogeneity	Analysis	81	0.3	Sabherwal & King (1992)
Dynamism	Planning	81	(-0.03)	Sabherwal & King (1992)
Hostility	Planning	81	(-0.17)	Sabherwal & King (1992)
Heterogeneity	Planning	81	(0.18)	Sabherwal & King (1992)
Dynamism	Politics	81	-0.20	Sabherwal & King (1992)
Hostility	Politics	81	0.36	Sabherwal & King (1992)
Heterogeneity	Politics	81	0.32	Sabherwal & King (1992)
External Environment	Internal Environment	Sample size	Coefficient	
Changeability (Dyn.)	InfoIntens PDT	157	0.45	Teo & King (1997)
Predict. (Dyn.)	InfoIntens PDT	157	(-0.00)	Teo & King (1997)
Heterogeneity	InfoIntens PDT	157	0.30	Teo & King (1997)
Scarcity (Hostility)	InfoIntens PDT	157	(0.06)	Teo & King (1997)
Compete (Hostility)	InfoIntens PDT	157	0.18	Teo & King (1997)
Changeability (Dyn.)	InfoIntens VC	157	(0.04)	Teo & King (1997)
Predict. (Dyn.)	InfoIntens VC	157	-0.18	Teo & King (1997)
Heterogeneity	InfoIntens VC	157	(-0.10)	Teo & King (1997)
Scarcity (Hostility)	InfoIntens VC	157	(0.08)	Teo & King (1997)

