A study of Swedish-Argentinean Coalitions

The Formulation and Interpretation of Global IS/IT Strategy

Master's Thesis in Information System Management

Author: Matilda Hannäs
Tutor: Mats-Åke Hugoson
Jönköping October 2004
Abstract

Background: The notion of IT strategies has changed during recent years, because our perspectives towards IT in the organizations have changed. We expect IT to be fulfilling business goals and leverage business opportunities and we have strengthened role of IT in the supply chain. Our expectations in IT, whether it is strategic or supportive, whether the infrastructure should be standardized etc., most likely affects how strategies are formulated, interpreted and thus also conducted in the organization. This is extremely crucial in companies who have there subsidiaries on foreign land. It is not given that the managers in different countries interpret the IT strategy the same way, just because it happens to be the same company. In most large global coalitions, a common central strategy for IT is the standard. I have chosen to examine it with Argentinean subsidiaries to Swedish companies as an example. Eight research questions were formulated, with the purpose of finding what is included in a generic IS/IT strategy, if the perspectives of managers are in line with the theory, whether views are consistent throughout the concern, and determine the matters in global IS/IT management.

Purpose: This paper aims at finding the parts in a generic IS/IT strategy formulation and explain how business management and IT specialists of global coalitions interpret the concept IS/IT strategy. A sub-purpose is to define the perspectives and priorities in global IS/IT management. The analysis of the paper culminates in a model - “the interpretation of IS/IT strategies”, with the ambition to give guidelines for managers and strategy formulators in a global environment.

Method: The study is of qualitative, exploratory and explanatory type, it has a descriptive part and a theory enhancing rational. By a thorough literature study and a pre-study I wished to explore and shed light on the perplexities in IS/IT management, nationally and globally. The broad research spectrum was a conscious choice to cover the complex area of IS/IT strategy and the various people affected. By conducting interviews; through questions and observations I also aimed at describing and explaining how IS/IT strategies are interpreted in practice. As a result of my hermeneutic research approach I am drawing conclusions from the similarities and dissimilarities I found in the different perceptions and relate it to the result of previous studies. The idea is thus to combine these insights in order to enhance theory in the area.

Analysis and result: what could be determined from the analysis is:

- IS/IT strategy composed of strategic planning, alignment between business- and IS/IT strategy, competitive advantage, KM, responsibilities, system architecture, interaction and security.
- No “generic” strategy exists, it needs adaptation. A good strategy for a global coalition is forward-looking and flexible and frequently evaluated. The strategy gives competitive advantage if leveraged; the results are related to IS paradigm view.
- IT people proves short sighted, business/strategy management have long term perspective. Contradicts Earl, (1999). The difference could be due to culture in this case. The organizational structure does not determine IT architecture, which contradicts King Sethi (1999).
- Managers and IT people are generally not in agreement. Interpretations of strategy are not consistent in global firms. Managers and not IT people need to take responsibility for the formulation and realization of the strategy. In accordance with Axelsson, (1995).

The implications to managers are: The organizational structure chosen should not be steering the politics for architecture, moreover that IT specialist with a technical view can not be responsible for a global strategy. Managers are encouraged to develop knowledge management, to include intellectual assets in the IS/IT strategy and work with culture enhancement programs.
# Index

**Abstract** .............................................................................................................2

**Index** .................................................................................................................3

1 **Background** ........................................................................................................6
   1.1 Problem development .................................................................6
   1.1.1 Problem definition ..........................................................8
   1.2 Research questions .................................................................8
   1.3 Purpose .........................................................................................9
   1.4 Delimitations ..............................................................................9

2 **Frame of References** .......................................................................................11
   2.1 Definitions of central concepts ..................................................11
   2.1.1 Soft system theory ..............................................................11
   2.1.1.1 Two system paradigms ..................................................12
   2.1.2 The I in IT; Information ......................................................13
   2.1.3 Information-, technology- and systems management strategies ..................................................13
   2.1.4 Why an IS/IT strategy? .........................................................15
   2.1.5 Review ...................................................................................16
   2.2 Formulating the generic themes of the strategy .........................17
   2.2.1 The soft themes .................................................................17
   2.2.1.1 The link to business strategy ........................................18
   2.2.1.2 The competitive benefits ............................................19
   2.2.2 The informational themes ..................................................20
   2.2.2.1 The importance of knowledge management ..................20
   2.2.2.2 Responsibilities & roles ...............................................21
   2.2.3 The technical themes .........................................................23
   2.2.3.1 System architecture and infrastructure .........................24
   2.2.3.2 System interaction .......................................................25
   2.2.3.3 Security & risk attitude .................................................27
   2.2.4 Review ...................................................................................27
   2.2.5 Realization ............................................................................28
   2.2.6 Strategic planning ...............................................................29
   2.2.7 Review ...................................................................................30
   2.3 A global environment ...............................................................31
   2.3.1 Global business strategy ....................................................31
   2.3.2 Global information technology .........................................32
   2.3.3 Organizational structure of the firm ...................................34
   2.3.3.1 Approaches to internationalization ...............................35
   2.3.4 Culture ..................................................................................36
   2.3.5 Review ...................................................................................36
   2.4 Literature review questions .......................................................37

3 **Method** ..............................................................................................................39
   3.1 Introduction to my research strategy ........................................39
   3.1.1 Knowledge characterizing ..................................................39
   3.2 Research approach .................................................................39
   3.3 Data gathering ............................................................................41
   3.4 The literature study .................................................................41
   3.5 The empirical data .................................................................42
   3.5.1 The pre-study .................................................................42
   3.5.1.1 Stories as data .........................................................42
   3.5.2 The interviews .................................................................43
   3.5.2.1 Sampling .................................................................43
   3.5.2.2 Design of the questionnaire .......................................44
   3.6 Modes of analysis .................................................................44
4 Summary of empirical studies .................................................................47
4.1 The Pre-study ..........................................................................................47
4.1.1 The IS/IT Strategy and its generalizability ........................................47
4.1.2 The “good” strategy ...........................................................................47
4.1.3 Globalization and its effect on IS/IM/IT strategy ...............................47
4.1.3.1 IS themes ..................................................................................48
4.1.3.2 IM themes ................................................................................48
4.1.3.3 IT themes ................................................................................49
4.1.4 Cultural issues and business opportunities ........................................51
4.2 Summary from Interviews ...................................................................52
4.2.1 Organisational structure and size ....................................................52
4.2.2 Why an IT strategy, and drivers to globalization ...............................52
4.2.3 The parts of the IS/IT Strategy ...........................................................52
4.2.3.1 IS Strategy ...............................................................................52
4.2.3.2 IM strategy ...............................................................................53
4.2.3.3 IT Strategy ...............................................................................53
5 Analysis ......................................................................................................55
5.1 A comparison of literature, pre-study and empiric material ...............55
5.1.1 What shall the IT strategy look like? (Q1, Q3, Q5) ...............................55
5.1.2 Why a strategy? (Q6) .........................................................................57
5.1.3 The content of a strategy and the effects of globalization (Q4, Q7, Q8) 57
5.1.3.1 IS themes ................................................................................48
5.1.3.2 IM themes ................................................................................48
5.1.3.3 IT themes ................................................................................49
5.1.4 Global themes (Q2) ..........................................................................63
5.1.4.1 Organizational structure and size ...............................................64
5.1.4.2 Drivers to globalization .................................................................64
5.1.4.3 Culture .......................................................................................65
5.1.4.4 Conclusions from global themes .................................................65
5.2 The Literature review questions ...............................................................66
5.2.1 The IS paradigm and comparison to interpretations (Q8) ..............66
5.2.2 Organizational structure (findings from questionnaires) ..................67
5.2.2.1 Multinational Global IT strategy .................................................67
5.2.2.2 Centralized Global IS/IT strategy ...............................................67
5.2.2.3 The international strategy ............................................................67
5.2.2.4 Transnational strategy and integrated global IT ...........................68
5.2.3 The responsibility of managers ..........................................................68
6 Conclusions .................................................................................................70
7 Discussion of results ..................................................................................71
7.1 Reflections ...............................................................................................71
References .....................................................................................................73
Appendix A Question guide .........................................................................78
Appendix B Question guide per mail ............................................................81
Appendix C Introduction letter to pre-study ...............................................84
Appendix D Introduction letter to Argentinean companies (Spanish) .........85
Appendix E Introduction letter to Swedish companies (English) ...............85
Index of figures

Figure 1 The red thread .................................................................................................5
Figure 2 Framework for analyzing IS/IT strategies ......................................................14
Figure 3 Designing an effective infrastructure..............................................................24
Figure 4 Examples of organizational structures...........................................................34
Figure 5 A “review of the reviews” ..............................................................................38
Figure 6 The Hermeneutic Spiral (Eriksson & Wiedersheim-Paul, 1997) ....................40
Figure 8 The content of an IS/IT strategy and effects on global companies ............58
Figure 9 The implications and results, an analysis model ...........................................69
1 Background

This background aims to guide the reader to the current themes in the research area of IT strategies and explains my interest for the subject. It validates the relevance of the problem and the motivation for choosing it. Moreover, it sifts through possible problems and emerges in a formulation of the problem, specified in the purpose, which also serves to delineate the problem area. The chapter ends with a disposition of the further reading.

1.1 Problem development

The notion of IT has changed. Not just the artefact of IT but the conceptions of IT too. Two decades ago, IT was the mantra for corporate performance enhancement routines and as the peak grew during the 1990s, everybody was convinced IT was a unique and self-sufficient solution and source of competitive advantage. It was logic to believe new investments were necessary, but no one really understood the relation of IT-investments and improvements in the business and technologies was introduced although incompatible with existing business systems and processes. There was an over-reliance on IT to solve a myriad of organizational problems, and there was a strong emphasis on using IT to drive up organizational efficiency. IT was definitely viewed as a strategic function, but who knew what “strategic” was? The role of IT in business activities was rarely understood out in the organization. Today we know that IT was just one ingredient in the post 1995 productivity acceleration, not the recipe. Today we expect IT to be fulfilling business goals and leverage business opportunities and we have strengthened role of IT in the supply chain (Magoulas & Pessi, 1999). Moreover, the diminishing value of tangible assets, the short-lived nature of competitive advantage and the prominence of knowledge management (Lev, 2001) makes strategies for managing information and technology absolutely vital. At the same time, we invest less in IT but demand that competitive advantage must be achieved through any investment, because today we know that competitive advantage is not related to spending on IT, rather the contrary has been proved in study after study, (Accenture 2003; Carr, 2004; Earl 1999 etc.). So what priority has IT strategies1 in today’s reality, driven by effectiveness measures, outsourcing, savings and cost-cuttings?

According to most authors, IT strategies are more strategic than ever. The question is if we are on the same track? Does everyone everywhere look upon IT this way? Probably not. Our perspectives to IT, whether it is strategic or supportive, whether the infrastructure should be standardized, and so on most likely affects how strategies are formulated and also how they are interpreted in the organization. This is extremely crucial in companies who have there subsidiaries on foreign land. It is not given that the managers in different countries interpret the IT strategy the same way, just because they happen to work for the same company. In some companies and countries it cannot be the same, because of legal or economic reasons, but in most large coalitions, a common central strategy for IT exists. I have chosen to examine it with Argentinean subsidiaries to Swedish companies as an example.

Avgerou, 2000, writes that in the field of information systems management there is a growing concern for issues such as the formation of strategy regarding information systems, aligning information systems development with business objectives, using IT to achieve competitive advantage and, manage global corporations. The latter, how IS management today deals with the

---

1 The abbreviations IT, IS, IM and IR are utilized in this paper. The term IS/IT strategy is utilized to represent all the four abbreviations. However, their respective content will also be treated separately. The abbreviation IT is part of an everyday-jargon characterising everything from information to technology. When solely the term IT is employed it may embody IT as a common concept and not just the technological, “how” factors.
complexity of using IT to manage multinational corporation in the emerging global economy, is of high importance to this study. I truly believe the globalization has particularly strong effect on the IT strategies of the future. The internationalization of markets has increased both threats and opportunities for every company in the world, whether acting on its home market or not. Altered world markets, economic slowdowns or boosts, and capital market conditions directly or indirectly (via suppliers) affect every company and implies new dynamics. Higher volatility in the marketplace results in higher exposure to strategic risk form the organization. This unpredictability of markets creates narrow but crucial windows of opportunity for well-prepared companies. The globalization coupled with the advent of distributed computing and the Internet revolution has led to highly complex systems composed of hardware, software, people and operational procedures. The coexistence of so much technology requires interoperability of the components in the IS/IT strategy and interoperability requires a set of overarching strategies to manage tough points and minimize conflicts. Moreover, because companies live and struggle in open systems, there is always cross boarder traffic; to some extent they have to interact with each other while keeping their boundaries. As the interactions are increasing in number and strategic significance the boarders are becoming more porous.

The well researched “classical problems” in IT-strategy needs to be viewed from a new global perspective. These general or traditional issues concerns the limited professionalism regarding IT architectural questions, difficulties of getting top management involved and how to divide responsibilities and motivate employees and co-workers, the balance of common, or universal and what should be local, between insight and dependencies of the systems, of independence versus integration, or the contradictory views on whether the strategy should be business based or IT-based. The latter is often mentioned under the theory of IS paradigms, and the basic proposition is that a firm’s strategy will be reflected in the design of its IS/IT strategy.

The theme of IS/IT strategies has never been more bustling, interesting and mind wrecking for researchers and managers. In essence, the fact that the definitions has changed during the last two decades, highlights the importance of strategic and organizational integration and, thereby, management integration of operation located in different countries. To rethink future IT-strategies we must be aware of how IT currently is formulated and interpreted in organizations. Even more so, we must scrutiny if the interpretation is coherent throughout the organization.

Conceptual theories on IS/IT strategies are plentiful, but the area lacks research with empirical focus, especially rare is empirical research on global IS/IT strategies. A study from 1999 performed by King & Sethi has proven that global mother-child coalitions have a central and standardized approach to IT strategy. In centrally coordinated businesses - which correspond to the global business by definition by Bartlett (1999) - IT is also globally standardized. The research of King & Sethi (1999) is interesting for this study indeed, but it has to be noted that their conceptualizations of the IT strategy is different from mine. They have tool view of technology and a particularly strong focus on IT architecture and infrastructural design whereas this study entails a proxy view of technology, meaning that the focus of IT instead lies on perception, diffusion and value of the technology. They also separate the IS management from the IT strategy, which is something researchers not agree on. In this study I have chosen to include both information system management, information technology management and general information management in the IT strategy. The tool and proxy view of technology is explained

---

2 A global company according to Bartlett (2004) is a corporation which operates with consistency as if the entire world were a single entity. The global approach requires considerably more central coordination and control than the multinational and it is typically associated with an organization structure in which various product or business managers have worldwide responsibility. In such a company, research and development and knowledge management activities are typically managed from the headquarters and most strategic decisions are also taken at the centre. More details on organizational structure can be found in section 2.3.3.
in Orlikowski and Iaconos’ work from 2001 of theorizing the IT artefact. In general existing research on IS/IT strategies is very much focused on technology deployment, infrastructural design and the architecture of the system rather than the “soft issues” of IS management. Moreover, previous research tend to have a one-sided approach, ie. focusing on the view of either business managers or IT specialists. There is a need to examine how perspectives from both a managerial and a specialist point of view.

1.1.1 Problem definition

The background explained how both the notion of IT and the perspectives of IT are assumed have an effect on strategy formulation and interpretation. The views are complex, and it is shown how the diversity in views increase in global IS/IT strategies. Technical and human factors, including cultural, organizational, national as well as international issues, are complicating the notion, formulation and interpretation of an IS/IT strategy. By coupling globalization theories and IS/IT-strategies, a challenging area of problem is generated. The specific problems are built on the complexity that can be derived from the discrepancies between theories and practise in global IT management on one hand, and the divergence of managerial perceptions, objectives and visions [about IT-strategies] on the other hand.

This paper examines, in difference to previous studies, how both managers and IT people look at IS/IT strategies today. How is it formulated? Can a good (single) strategy be conducted in a large global coalition? As empirical basis for this paper, I chose three coalitions who claimed to be global in order to test King & Sethi’s (1999) statement. I also sampled seven companies with other organizational structures (multinationals, internationals etc.) to see if any major difference could be found. King and Sethi (1999) examined parent child coalitions. Accordingly I chose to examine Argentinean subsidiaries from Swedish firms, which indeed can be classified as a form of a coalition. The reason for choosing Argentina was a research grant, which enabled the practical and personal data gathering. The parent-child coalition is especially fascinating because the entities of the coalitions may have different objectives in spite of their common strategy, and different internal strategies, which implies that a strategy can be considered successful by one entity and not by the other. Adding the cultural, social and economic differences between Argentina and Sweden makes it even more interesting. Argentina is a country in deep economic crises, with grand social differences high corruption and low level of dynamic competitive advantages like education and management. It is a country that has based its industry on unprocessed agricultural goods and it has very low or no value in the service sector. Sweden on the other hand is one of the leading countries in the world in information technology and intellectual assets, with a commercial balance heavy on services, a high level of education and management, low corruption and very small social differences. Ask one of the IT specialists at Skanska Argentina about the company’s global IT strategy and he is likely to scratch his head. But it does not have to be taken to that extreme though. How many managers are on the same track regarding what should be included in and understood from an IS/IT strategy? How could a global IT strategy be formulated and managed for a coalition with entities hence so different?

1.2 Research questions

Eight research questions were formulated. The first two aims to guide a literature study in order to find and define the factors that constitute a strategy and to determine what the issues are in global firms. The review and compilation of information and research led to new questions, which are presented in the end of chapter 2. The next three questions guided the pre-study on Argentinean land. They concerned the components of the strategy and global issues too and the last of them questions the central single strategy. The intention was to determine the importance of an IT strategy, if the opinions of managers are in line with the theory and whether they are consistent throughout the coalition. The pre- study of the paper, an interview with Mr.
C at International Financial Systems, in Argentina, and expert on global strategy helped to fill the gaps in global IS/IT management. The three last questions directed the empirical study. As argued in the background, research on IS/IT strategies are lacking global focus and empirical observations. Therefore, there was a need to scrutinize and compile theories and examine, by interviewing professionals, how IS/IT strategy is interpreted in large global coalitions.

The purpose of the literature review was to find:

1. What are the generic themes that can be included in an IS/IT strategy?
2. What are the issues of global business strategy and global information technology?

The purpose of the pre-study was to aid me in answering:

3. Can a generic global IS/IT strategy be formulated? If so, what parts are vital?
4. How does the globalization affect the generic IS/IT strategy?
5. What is a “good” strategy and is it possible and/or beneficial to conduct a single good global IS/IT strategy in a mother child coalition?

The idea of the empirical study was therefore to find and understand:

6. Why an IS/IT strategy?
7. Is the interpretation of the IS/IT strategy in accordance with theory within the research area?
8. Are interpretations of the concept IS/IT strategy consistent throughout the concern?

1.3 Purpose

This paper aims at finding the parts in a generic IS/IT strategy formulation and explain how business management and IT specialists of global coalitions interpret the concept IS/IT strategy. A sub-purpose is to define the perspectives and priorities in global IS/IT management. The analysis of the paper culminates in a model - “the interpretation of IS/IT strategies”, with the ambition to give guidelines for managers and strategy formulators in a global environment.

1.4 Delimitations

Pure technical descriptions regarding hardware for interaction, system infrastructure etc is excluded from the theoretical part “Architecture”. This type of detailed information is weigh beyond the purpose of this study, which not should be viewed as guidelines how to formulate a global IS/IT strategy.

I have treated culture in this paper as an effect of the empirical study. The nature of corporate culture is far too complex issue to be covered within the frames the theory in this paper. Conflicting goals and expectations because of the cultural aspect is evident and there will also be national cultures to take into account. However, in this thesis, those national cultural aspects will only be treated as a part of the challenges of managing global business. Discrepancies in themselves should not be viewed as problems, but it is vital to understand them. I have for instance let the company specific cultural differences constitute a part of the explanation, but not the theory. This is a conscious choice since the striking cultural difference between Swedish and Argentinean companies might steer the focus from the real purpose of the paper, which is to analyse the interpretation of IS/IT strategy views, although admitting culture is an important
factor in the analysis. Economic or social aspects are indeed interesting but will not be part of the discussion.

The majority of my research was conducted in Argentina. I aim to generate knowledge about global firms but the empirical findings are solely directly generalizable to global Swedish Argentinean coalitions. Never the less, the results may be useful for strategy formulators in any kind company, but for coalitions of the parent-child type in particular. It is intended to help IS/IT strategy formulators (i.e. business and IT management and the team of specialists) focus on the critical themes in global IT management and revise existing strategies. Additionally it could be helpful for professionals to gain a deeper understanding of each other’s perspectives and priorities. Through an increased understanding and a common vision of objectives, it is likely that this study can contribute to a better development process and maintenance of IT-strategies in firms, nationally as well as internationally.
2 Frame of References

The idea of this section is to present the theoretical bricks and previous research that constitutes the exploring part of my purpose. The chapter begins with explanations of a few central concepts, and moves on to a section about the contents of IS/IT strategy, together with more concept definitions where appropriate. Moreover the aspects of globalization are discussed, namely general business strategy and global IS/IT. Finally, realization, evaluation and strategic planning are reviewed. The chapter can be viewed as an introduction to the analysis in chapter five where both themes (IS/IT strategy and global issues) will be integrated with the empirical material from chapter four.

2.1 Definitions of central concepts

2.1.1 Soft system theory

System science has had a major impact on the development of theories and methodology within the field of IS and IT. In Avgouros’s (2000) view it is the most influential origin of IS/IT theories. However, not all methods and all concepts belong to the domain of systems science; many of them are flawed or fuzzy. Despite this, an imperfect theory is much more useful than a random behavior. This study aims to describe, explore and interpret IS/IT strategies, which not is an exact science, therefore, an understanding of the system theory is vital. For instance the “hard” and “soft”, and the “open” and “closed” system view offers different explanations as to the formulation of IT/IS strategies. The system theory is challenging the basic principles of classical science to break down problem into as many separate parts as possible, and try to determine a causality between the parts. A broad number of disciplines can be classified under the concept of systems thinking. Ludwig won Bertalanffy’s biologically inspired philosophy about open systems and the game theory developed by Neumann and Morgenstern is one of the earliest. According to Kast and Rosenzweig (1985) a system is an “organized, unitary whole composed of two or more interdependent parts, components, or subsystems and delineated by identifiable boundaries from its environmental suprasystem”. When the components include human beings, the system is referred to as “soft”. The soft system is dynamic, it can experience growth, it is not predictable and depends on the will of the components to perform well. It includes relations, responsibility and knowledge and can think for itself. Subsystems cooperate with each other and are dependent of each other; they supply the system as a whole with qualities that are not distinguishable within each subsystem. The cooperation between the systems also points at the occurrence of a common goal. In turn, the common goal requires (managements) conductivity, from where resources are distributed to each subsystem, where they are used to reach the common goals (Checkland, 1992).

Literature also distinguishes between two types of systems, open and closed. We live in an era of open systems, argues Raval (2001). Open systems interact with others in their environment often creating synergies. In contrast to this, a closed system is defined (physically) as a self-supporting system. It does not exchange any material, nor energy or information with its environment. Nordenstams (1991) theory of relative open information systems is built on four factors; sensitiveness towards changeable environmental factors, adaptable organizational structure, extended role of the individual within the organization and finally a strategy dialogue between the individuals and management. Relatively open systems must therefore build on smaller parts, subsystems that are connected to each other in a way that enables flexibility in those forms of cooperation, and that are easy to change without major changes in the entire system (independence). The fact that an open system exchange information or energy makes it more flexible and adaptable. It also implies greater interaction, which in turn implies a higher degree of communication.
The creation of a suitable structure of information systems is a strategic work and the development or procurement of a certain system is realization work. Magoulas and Pessi, (1998) refer to strategic work as town planning and realization work as house building. The structure of IS should reflect the future business structure. In order to conduct strategic structuring, a business model is need for suitable systems delineation. The main focus of IS/IT strategy is planning for good systems.

In this context systems refer to structures of systems, not single systems. Perceivability means that each system should be defined without knowing the details of the other (Hugoson, 2003). Important characteristics are flexibility, a limited number of levels, well defined relations, independence between systems, defined objectives (which are possible to fulfill without disturbing other systems) and explicit control systems. There is also a need for manual backup behind every system, since systems cannot take responsibility. In contrast to computers, people can improve and find new ways. The major parts of the system concept, goal of the system, system delineation, the components, the resources and management, will be discussed further on.

2.1.1.1 Two system paradigms

The theories of systems that has dominated the professional and scientific debate are the business based design and the IT design. The differences of the concepts lie in the principles of dependence, stability, changeability, availability and interpretation of information (Bone & Saxon, 2000). The two approaches has often been defined as each others contrasts and it is assumed that one has to choose one of the design theories in its entirety with the expectation that it would suit all possible situations. The possibility of using the basic principles in combination is often ignored, according to Magoulas and Pessi (1998).

The IT paradigm is a technical theory that has its focus on information as a central resource that must be controlled centrally. The most important principles state that objects in the business are stable phenomena, while information and the organization itself is alterable. Information is separated from functional units, which normally guarantees stability. The administration of information is made centrally and a special functional unit is established to control the administration. The information resource should also be available to everybody within the enterprise; this is planned on the assumption that knowledge of information often cannot be planned for in advance. A common view in the IT paradigm is “if the system is good, why doesn’t the structure work?” (Hugoson, 2003).

The business-based approach is the soft system theory in practice. The business based view is to look at an IS as a resource, not a system. Here, the question is instead “what can people do in the enterprise?” It stresses coordination between information systems, where each information system is administered by the part of the enterprise that uses that system. The design consists of autonomous but cooperative information systems. Each information system supports a functional unit within the business, which also implies local responsibility for that unit, thus responsibility for coordination is reserved for upper management. All information is stored locally on local information systems. The design differentiates between a) local information that is passed between the information system and the user and b) connective information (between different information systems). The dynamics within the design is achieved by allowing local information within a functional unit to be manipulated independent of other functional units. By

---

3 To describe and define what is internal and external in the system

4 Because of my background as from the business area, I am biased to take on a business-based perspective, i.e. the conscious decision is to view IT with a business alignment as an ideal. I am also interested in the human and soft aspects of the system.
doing that, stability within the design is preserved. Cooperation between the information systems is achieved by the exchange of messages. Each IS should support a defined part of the enterprise. The question is how to plan for and construct an IS/IT strategy that can support each part of the enterprise (Hugoson, 2003).

2.1.2 The I in IT; Information

There is nothing new about information-based businesses. Even in the industrial age, some theorists argue, organizational structure was a consequence of information-processing goals. And the tasks that managers perform - planning, co-ordination and decision-making - essentially involve manipulating information. What has changed in the "Information Age" is that more and more businesses are defining their strategies in terms of information or knowledge argues Earl, (1999a). The result is a blurring of traditional industrial boundaries, a breakdown in the standard distinction between "horizontal" and "vertical" integration, and new analyses of the value chain in terms of opportunities for capturing information. Today IT is been seen as the value-creating power of information, a resource that can be reused, shared, distributed or exchanged without any inevitable loss of value; indeed, value is sometimes multiplied. And today's fascination with invisible assets means that people now see knowledge and its relationship with intellectual capital as the critical resource, because it underpins innovation and renewal.

As Earl (1999a) points out, it is not just the obviously information-intensive companies that are playing out these new strategies. More "traditional" companies see some of the same logic. When the chairman of Johnson & Johnson, announces that "We are not in the product business; we are in the knowledge business" it means that new logics are at work. These logics are seen in sector after sector today. A business is an information business when it is system-dependent and requires its personnel to be smart information workers (Earl, 1999a). Managers and staff have to be adept at information processing; otherwise operations come to a halt when the systems break down. Indeed, it becomes difficult in the world of intangible assets and electronic distribution channels to be clear about what vertical or horizontal strategies are.

One way of understanding the strategic opportunities and threats of information as digital technologies converge is to think not just of the physical value chains of business by Porter & Millar (1984) but to consider the "virtual value chain" which explains how information can be captured at all stages of the physical value chain. Obviously such information can be used to improve performance in each stage of the physical value chain and to co-ordinate across it. Some theorists would suggest that every business is an information business, maybe because the way organizations are designed is often based on an information-processing goal.

2.1.3 Information-, technology- and systems management strategies

The intent of a strategy is to provide competitive advantages through long-term planning (Hamel & Prahalad, 1990). Strategies should describe the perceivable operational plan with a grand perspective and formulate the basis for a long-term plan. Therefore, it only includes guidelines and no detailed descriptions. The ideal situation is to have a strong integration or alignment, between the general business strategy and the different strategies for information technology, information systems and information management.

The English literature divides IS/IT strategy in to components, information systems (IS) and information technology (IT), while Swedish literature include both IS and IT in the concept. A framework of Sabherwal and Chan (2001) embraces three concepts, generated from and validated by, other researchers’ work. They argue that information systems (IS) involve the alignment, and strategic benefits, whereas the information technology (IT) deals with the hard
themes, the technology deployment and policies, architecture, standards, security levels, and risk attitudes. Finally, information management (IM) includes relationships, roles, and responsibilities.

In order to hit IS/IT strategy from different perspectives I created a simple model (figure 2), inspired by the classification by Sabherwal and Chan (2001) but it includes insights from Earl (1996), too. It can be seen as a framework for how I structured the different themes within IS/IT strategy. Moreover it assisted in organizing the theoretical references and formulating the question guides. The framework proposed by Earl is different in the way that it stresses the human factors and has a heavy focus on the IM strategy. Earl developed this conceptual framework 1996 and it had considerable influence on practice when distinguishing information systems (IS) strategy from IS/IT strategy;

- IS strategy – formulated on business unit level, demand oriented, business focused, organization with IT
- IS/IT strategy – scope and architecture, support oriented, technology focused, IT with organization
- IM strategy – administration and organization, roles and relations, leadership oriented, organization and IT

According to Earl (1996), IT (how) - the technology infrastructure or platform - often seemed to distract attention from IS (what) - the identification and prioritization of systems or applications for development. Then information management strategy was added, (who) - the all-important question of roles and responsibilities in the delivery, support and strategic development of IS and IT. Of course, all these were influenced by - and influenced - the business or organizational strategy (why), which was concerned with strategic intent and organizational architecture. In a perfect world, corporations strove for a good fit between these four domains.

Earl has though recently (1999c) added a fifth domain, one that is difficult to formalize but in which companies increasingly have objectives, principles and policies. This is the domain of information as a resource, or of information resource (IR) strategy. It is perhaps the "where"

---

5 The concept of technological deployment corresponds to the way companies plan and manage information technology to benefit from its potential and effectiveness (Croteau & Bergeron, 2001).
question: where are we going? So much value creation can come from information but it is not always clear what the end result will look like.

The aspect of IR strategy drives a need for the distinction between data, information and knowledge. Some chief information officers and chief knowledge officers - believe such classifications are unhelpful, and some academics have certainly put their careers back by agonizing over such questions. Anyhow, for this work, the following conceptualizations are of interest. Information is derived from data, and knowledge from information, and thus we are reminded that data has enormous potential - far beyond just being a representative for a transaction. Articulating and seeking to classify these intangible resources alerts people to their value and, more particularly, to the different sorts of investments they require. Technology is suited for data processing. Knowledge processing is much more of a human activity. Information has characteristics, particularly of human interpretation, above and beyond data. Knowledge has something more than information, perhaps learning. A logical test of the value of an additional piece of knowledge could be whether it provides new understanding (Davenport & Prusak, 1998).

Ward and Griffiths (1996) argue that the three levels of strategy are information technology strategy (on operational level), information systems strategy (on business unit level) and business strategy (in which he includes IS/IT strategy). The latter is the highest level of the strategy, the business strategic level, covering all parts of an organization. This overreaching strategy can communicate the goals of the mother company and the critical success factors, which characterizes its business activities. No business strategy is complete without an information strategy; business strategy and information strategy need to be integrated. Moreover, IT, information systems and information, are to be seen as resources that no longer just support business strategy; they also help to determine it.

2.1.4 Why an IS/IT strategy?

In accordance to the previous section we can define an IS/IT strategy as a structured framework designed to bring together needs for information systems and enabling technologies. It is necessary to tightly control the process of creating the strategy to ensure that the needs of the business are met and enabled. Not all organizations have a written strategy, likewise, not all organization have need for it. However, organic growth in the absence of a strategy often leads to unnecessary complexity and ultimate failure. Priority of business needs is a paramount consideration, and a balance between risk and taking advantage of leading edge technologies is required (Magoulas & Pessi, 1998).

The strategist of the 1990s had a fairly well defined problem set from which to shape the strategies that led information technology to the year 2000. Today, trends like the client/server architecture, and the Internet revolution is aging. Users now expect to interact with corporate computing services not just from stationary desktop PCs, but also from a wider variety of mobile devices in any location worldwide, in pace with the globalization. This poses further questions of resources and geographic locations. IS/IT strategies are revitalized; middleware, managing knowledge rather than just data, peer-to-peer technologies represent just a few of the challenges (Alter, 1996). However the grandest challenge is the one that the globalization poses.

Managers have to face up with directing the business through a transformation in order to be successful in a globally competitive environment (Magoulas and Pessi, 1998). The role of information technology has developed from being a means to rationalize and automate to being a means to create dynamic and flexible organizational forms. It also creates new strategic possibilities for organizations that lead to a reformation of visions, missions and operations. Morton (1991) argues not all organizations are sufficiently mature or have the required competence. This maturity must be developed over time and the question of integrating and coordinating the systems must be investigated from different points of views.
Earl conducted several studies in 1998 of which one is aimed at observing the technology organization, control and planning through interviews with British IT managers. It is an old study but the result from it is interesting to compare to the results of this study. The common result was that the planning and IT-strategy was ranked as the most important and complex, whereas the control questions were given low priority. Technology was given lowest priority since it is subordinate to leadership questions and becomes a consequence of the same.

In the same study, Earl demonstrated that IT managers and business managers have different goals for short and long term. IT managers emphasize strategies for IS short-term and long term the planning of IS, users consciousness, and mastering new technologies. Business managers on the other hand prioritize short term goals like contacts with IT department, define IS/IT needs, agree on IS/IT prioritize, start and finalize projects. When it comes to long term goals, the priorities for IT managers are mainly the same as with short-term goals but here, education and user engagement is also identified as part of the goal. Business managers stresses the weight of exploring new IT, and secure that applications meet the need, IT’s influence on peoples behavior and change leadership. This demonstrates – in contrast to previous studies - that IT management thinks long-range while the business leaders still have more concerns about the present. In another study from 1998 Earl and Sampler examines the most important reasons for formulating a strategy. They are;

- To develop IT to capitalize on strategic opportunities and diminish strategic threats,
- The need for integrating IS/IT investment with business needs, a wish to create competitive advantages through IS/IT and
- The modernization of the IT-department and concentration on IT activities.

2.1.5 Review

Theories within IS/IT give different perspectives depending on their relation to the IS paradigm. The distinction between open and closed, and also between “soft” and “hard” system theory provides an interesting theoretical base. When the components include human beings, the system is referred to as “soft”. Literature also distinguishes between two types of systems, open and closed. The approaches that has dominated the professional and scientific debate are the business based design and the IT design. The business-based approach is the soft system theory in practice which stresses coordination between information systems, while the IT paradigm is a technical approach that focus on central control. A firm is an information business when it is system-dependent and requires its personnel to be smart information workers. Managers and staff have to be adept at information processing, and knowledge management to be competitive in today’s environment. The intent of a strategy is to provide competitive advantages through long-term planning. In accordance to the previous section we can define an IS/IT strategy as a structured framework designed to bring together needs for information systems and enabling technologies. Information systems (IS) involve the alignment, and strategic benefits, whereas the information technology (IT) deals with the hard themes, the technology deployment and policies, architecture, standards, security levels, and risk attitudes. Finally, information management (IM) includes relationships, roles, and responsibilities. Furthermore, the business strategy and information strategy need to be integrated with IT and IS.

---

6 Including strategic planning, the alignment to business goals, resource planning and to develop IT for strategic advantages, the mapping of future structures and the allocation of scarce IT resources.
2.2 Formulating the generic themes of the strategy

Henderson and Venkatraman (1999), view strategy as involving both formulation (decisions pertaining to competitive market choices) and realization (structure and capabilities of the firm to execute the formulation choices). I have chosen to incorporate both formulation and realization in the themes of IS/IT strategy, but realization as an instance is also treated in the end of the section. The same authors argue that less attention should be given to the classical functional internal focus, in favor for the external themes of strategy. Traditionally the IT function has been viewed as a support function, not essential to the business management of the firm.

Ward and Griffiths (1996) express the four most common goals in strategic IS/IT strategy formulation are:

- Integration of the IS/IT with the business and priorities as well as giving priority to development.
- Competitive advantages with IS/IT, through determining the threats and opportunities in the environment.
- Creation of an effective and flexible platform for the future.
- Improved capacity of measuring the benefits and costs of long-term investments, improved usage of resources and budgeting.

Earl (1989) argues there are five important questions to ask oneself when formulating an IS/IT strategy; Why are we doing it? What do we want to achieve? Where are we today? How shall the organization do it? What shall the IT strategy look like? Falk and Olve (1996) have tried to determine the themes that should be included in the IS strategy. Since they concentrate on the information-strategy part they stress different the “what” factors; they argue the most important requisite is that the strategy should be in accordance with the mission statement, the business goals and the business strategy. Other important components are according to Falk and Olve (1996): competence development, roles and responsibilities, principles of system and application, outsourcing, information management, architecture, security (including ethics and moral).

The formulation is an iterative and dynamic process, starting with an information searching procedure, where the present and future organization is determined, and an investigation is undertaken on how IT could support these processes. Next, possible IT solutions are searched for. The possible changes to the strategy and/or business are determined analyzed and validated. Afterwards follows a period of informing and educating the involved stakeholders (top management; business managers, CIOs and IT management) through the simulation of different IT scenarios. The IT’s role as a future business enabler is pictured and explained. Finally, and ideally the strategy is put on paper with business cases and concrete action plans that are performed and evaluated.

A generic strategy document is worth nothing, because if it is generic the competitive component is gone, the prerequisite in order to gain any advantage with the IT strategy. However, after careful literature studies and analysis of what a IS/IT strategy is, I came to the conclusion that there are certain themes that are more generic than other. The research left me with a list of six themes; alignment with business, strategic benefits, responsibility, architecture and technology deployment, and security.

2.2.1 The soft themes

The soft themes that are discussed under this headline are what Earl (1996) call the “what” factors, i.e. the information system themes, including the alignment with business strategy and the impact of competitive advantage and performance.
2.2.1.1 The link to business strategy

It is generally accepted (implicit or explicit) that one of the key factors for successful IS planning is the linkage\(^7\) of IS/IT strategy and the business strategy (Henderson & Venkatraman, 1999; Grover & Segars, 1999; Horner & Benbasat, 2004; Sabherwal & Chan, 2001; Croteau & Bergeron, 2001; Lederer and Mendelow, 1989; Das et. al, 1991; King & Sethi, 1999; Bergeron & Raymond, 1995; D'Souza & Mukherjee, 2004; Smith & Roberts, 2000 etc). Smith and Roberts (2000) argues the key to aligning IT processes with business strategy are focusing on strategic objectives, understanding processes, establishing an integrated measurement program and manage change. Horner and Benbasat, (2004) argues the linkage has several dimensions; the cross-reference between written business and information technology plans, the IS and business executives mutual understanding of each other’s current objectives, and the congruence between IS and business executives long-term vision for information technology deployment.

**Process alignment** Business processes are the sets of activities, often cutting across the major functional boundaries within organizations (for instance, sales, manufacturing, and engineering, among others), by which organizations accomplish their missions (Hammer & Champy, 1993). Examples of business processes include order fulfillment, materials acquisition, and new product development.

Ever since computers were first used in commercial situations, organizations have tried to improve the operation of their business processes through the application of information technology in ways that have come to be described as "automation." While automation has achieved many stunning successes, experts in management and information technology have begun to recognize its considerable limitations. In brief, when business processes are automated without first streamlining and improving them (for instance by eliminating redundant activities), organizations generally fail to achieve significant benefits from their large investments in information technology. Moreover, when automation efforts are confined to small pieces of a business process (such as those pieces that fall within the boundaries of a particular functional unit of the organization), it can happen that the larger process is sub-optimized, and performance is decreased, rather than improved. Growing recognition of the limitations of the traditional "automation" paradigm has led experts to urge managers to conduct their system acquisition and system development activities in the context of larger organizational structuring efforts. By carefully extending the boundaries of the whole business process and identifying its critical performance measures and the major points of leveraging them before selecting or developing an information system, managers can avoid the pitfalls of automating a bad process and automating the wrong process (Davenport, 1993).

The essence of aligning IS/IT strategies with business strategy are to think of structures and processes. The structures of systems are essential in strategy thinking, the structuring can be viewed as a town planning approach to building. Structures are viewed top-down and the process of planning is ongoing. Indeed the business processes do have a bottom up orientation, implying that each system should carry out the development from their perspective. End-users’ new solutions guide development, which is made inside out, i.e. with participation and motivation for the consequences (Magoulas & Pessi, 1999). The process approach involve selecting the resources to be able to fulfill the task, it depends on the type of the sub-process performed. The subsystems can be improved through change-management and analysis. The analysis should cover the specifications for process development (IS specification) and a description of how the system works (process description).

---

\(^7\) In addition to “linkage” several other terms are used in the literature- alignment, fit, coordination. Because of the similarity of the underlying concepts I do not distinguish between the and use them interchangeable.
The link to value The IS/IT strategy and its link to business value are subject to a passionate debate. Few if any aspects have more potential to generate both durable cost savings and improved business returns. Various studies demonstrate that high performance businesses work to optimize their information technology, and understand that integrating their IT with business objectives is a core competency (Accenture, 2003). Moreover, it is argued the real differentiator of the high performance businesses is linking IT investment and spending to the creation of business value. Still, few IT-strategy decisions are subjects for the top-executives of the firm. The optimization of IT’s potential in this way is not well understood by many companies, who often base their IT-strategy decisions on intuition and past practice. Simply spending more on IT does not help, on the contrary, high performance businesses; according to Accentures’ study; almost always under-spend their peers on IT (measured as a percentage of revenues). Neither does cost cutting solve any problems. These types of firms have understood that IT spending goes beyond conventional IT ROI-methodologies, which are often used primarily as hurdles for project approval. Moreover, it goes beyond traditional client-vendor relationships. Firms should evaluate IT investments continually and stop IT projects that does not produce the expected business value. Above all, in high performance businesses the most important responsibility for IT management is to ensure that IT and business value linkage works continually well.

The strategic in IT Ever since the bursting of the technology bubble, consultants have had a hard time proclaiming that information technology is the key to business success. The IT expert Nicholas G. Carr (2004) argues as the power and presence of IT have grown, its strategic relevance has actually decreased. IT has been transformed from a source of advantage into a commoditized "cost of doing business". Carr shows that the evolution of IT closely parallels that of earlier technologies such as railroads and electric power, i.e. infrastructural technologies. He continues by laying out a new agenda for IT management, stressing cost control and risk management over innovation and investment. Furthermore, he examines the broader implications for business strategy and organization as well as for the technology industry. His opinion generated a pile of controversy views on IT’s changing business role and its leveling influence on competition.

Davenport, to start, argues that the information component is clearly strategic - always has been - always will be. Next to people, information is an organization’s most critical (and strategic) resource, even before money. Smart IT executives are really smart information executives. They know that all the IT in the world is useless unless it facilitates people using information to make better decisions or take actions that are in the interests of customers. The essential is the company’s business model, the information it needs and the technologies that generate the needed information. The technology component of IT is only strategic in the sense that it helps an organization define and achieve strategic goals; otherwise it is simply a tool/commodity like the telephone, argues Carr (2004).

2.2.1.2 The competitive benefits
Bergeron & Raymond, (1995); Dehning & Stratopoulos, (2002); Hidding, (2001); Feeny & Willcocks, (1998); D’Souza & Mukherjee, (2004); Henderson & Venkatraman, (1999) are a few of the many authors examining IT or IT strategy’s contribution to bottom line results. Some researchers seriously question the competitive advantage implications of IS/IT. The sustainable advantage is a highly perceptual matter and if an impact on performance exists, no relation ever shows up in objective ROI as reported in financial statements. Hidding (2001) argues logically that since IT strategy frameworks are specializations of general strategy theories, it is not very likely they could lead to any advantage, if not the dynamics of each company is considered, suggesting a strategy paradigm that is appropriate for a given situation. A sustainability analysis may make it possible to predict the length of time for which an advantage can be sustained, and
determine the conditions (technology, change, infrastructure, applications, customer needs, etc) that will affect the advantage. Hidding also mentions that different strategy paradigms are appropriate, depending on the difference in dynamics.

In general, IT is no longer viewed as a long-term strategic advantage since it is fairly easy to replicate. Indeed, the research on the positive correlation between IT and competitive advantage, displays high disparities, even contradictory views. Feeny and Willcocks (1998) assert that it is not effortless to duplicate the performance achieved through successful use of IT and that these copied IT-enabled strategies can lead to a sustainable competitive advantage. While some emphasis the importance of a sophisticated infrastructure they argue it is the strategy orientation that makes a firm perform better. Henderson and Venkatraman (1999) have found that IT management skills are the most likely source of sustained IT-based advantage. Moreover, they argue that companies inability to realize value from IT stems from lack of alignment between business and IS/IT strategy. Dehning and Statopoulos (2002) are examining the factors that are believed to lead to a sustainable competitive advantage due to an IT enabled strategy, and test the factors empirically. Their findings reveal that managerial IT skills are positively related to sustainability and competitor’s knowledge of competitive advantage is negatively related to sustainability. However they found no support for technical IT skills or IT infrastructure as a source of sustainable competitive advantage. Dehning and Statopoulos also mention the increasing integration as another managerial opportunity. In line with Porters’ ideas of a virtual value chain, they urge the need for integrating IT across activities or businesses units, making the process of imitation more difficult for competitors. Bergeron and Raymond (1995) argue they have strong empirical evidence for the strategic conditions under which information technology and strategy contributes to the bottom line results. The main attest of the findings is that the peak performance is achieved by firms that combine a strong strategic orientation with a strategically oriented IT management.

Although no sustainable advantage can be proved, by accepting IT’s role as an enabler of competitive advantage one can move forward and define how to combine business architecture with IT architecture. The general approach has been to cast the task as a technology diffusion problem and to find ways to reconfigure the technology and “align” it with business goals and business processes. D’Souza and Mukherjee (2004) argue three fundamental constraints must be recognized if IT business alignment is to succeed: hastened organizational change, IT altering the core processes and capabilities, and top management not able to adjust mental models for change. On a more informal note, Ward and Griffiths (1996) argue that the likelihood of having an advantage from an IS/IT strategy is at its highest when management have understanding for the culture of the organization, motivates the involved personnel, and uses the most suitable persons from the company or external resources. Vital is also to establish the goals, describing how to fulfill them with analytical and creative techniques and make sure that the company is supporting its own recommendations.

2.2.2 The informational themes

As enterprises grow in size and complexity, information management increases in importance. Under information management I have gathered research about knowledge management, and the responsibilities and roles in the organization according to how Earl (1996) defines information management, the “who’s” of the strategy.

2.2.2.1 The importance of knowledge management

Davenport and Prusak (1998) defines knowledge management as “the process of systematically and actively managing and leveraging the stores of knowledge in the organization.” Organiza-
tional learning seems to become one of the prominent aspects that enterprises would like to focus on and incorporate in their business strategies.

Recent surveys indicate that most companies regard knowledge management as a critical part of their strategy. Yet the concept is complex, and most companies are not good at managing knowledge. Perhaps worst of all, it is hard to correlate with financial performance. The amount of information with which people are overflowed grows, yet the human capacity for attention has remained constant. The time has come to pay attention to attention argues Davenport (1993). Firms may undervalue the creation and capture of knowledge, they may lose or give away what they possess, they may inhibit or deter the sharing of knowledge, and they may underinvest in both using and reusing the knowledge they have. Above all, they may not know what knowledge they have. Understanding the role of knowledge in organizations may help answer the question of why some firms are constantly successful argue Davenport & Prusak, (1998). “Firms ability to produce depends on what they currently know and on the knowledge that has become embedded in the routines and machinery of production. The material assets of a firm are of limited worth unless people know what to do with them” (Davenport & Prusak, 1998). A shared knowledgebase that truly integrates the company’s intellectual capital must be created through a user pull corresponding to the technology push.

Earl (1999c) noticed in a later paper that knowledge management tends to be implemented from one of two directions. "Either people come at it from a human resources direction and say it's all about culture, or they believe it is all about IT and databases." Both these approaches are flawed. "You need to keep both approaches in mind but maintain a balance," he says.

**Intellectual property and sharing barriers** By one informed estimate from the late 1990s, three-quarters of the Fortune 100's total market capitalization was represented by intangible assets, such as knowledge bases, patents, copyrights and trademarks according to research by Reitzig (2004). In this environment, cautions the author, intellectual property management cannot be left to technology managers or corporate legal staff alone - it must be a matter of concern for functional and business-unit leaders as well as a corporation's most senior officer. To realize the full value of their companies' intellectual property, top executives must seek answers to how the company can use intellectual property rights such as patents and other certification methods. “The knowledge worker is arguably the single and most important challenge being faced by many kinds of organizations in years to come” (Newell et al, 2002, p. 2).

**2.2.2.2 Responsibilities & roles**

When structuring their information systems, some organizations choose to follow an explicit information systems strategy. An important question during the strategy realization is how the responsibility for the systems should be distributed within the organization according to Axelsson (1995). He divides roles in system users and system responsible, then responsible is in turn divided into three different roles; business and IT-management, change management and IT providers. The distinct denominations of roles are not of importance, but attention should be given to the area of responsibility.

Axelsson has examined two strategies, with different approaches to this issue, in six case studies. One of the strategies suggests that the information system responsibility should be held by a central data function separated from the business functions, while the other strategy proposes that each business function should be responsible for its own information systems. The result shows that both strategies have problems when it comes to distribution of responsibility, according to the theoretical description of each strategy. In reality, the responsibility often ends up at the data function or in a similar department, regardless of what the intentions were. One reason is that both users and managers are playing very passive parts in the realization of the strategy.
The chief information officer (CIO) in English research can for example be placed on equal level with IT manager or a change manger in a Swedish organisation in certain companies. Smaller firms might not have a CIO, neither an IT manager. In that case IT specialists together with top-level managers can constitute IT management. Another possible team creation is processes specialists in interaction with management.

The business and IT management is responsible to specify demands and ask for and procure an efficient IT solution, to evaluate proposals and offers and compare it to relative improvements, and to develop business processes. The IT providers are usually technical specialist wherefore they have a narrower responsibility area including IT operations and maintenance, IT visioning, to work out solutions, and possibly even develop them. The change management must analyse demands and possible improvement and initiate development projects. To utilize the metaphors again, the IT provider is the house builder and the B&IT-management is the town planner (Bone & Saxon, 2000; Hugoson, 2003).

**Appoint the right managers** What qualities does the successful IT management have? A few years ago, Earl's (1999b) research indicated that the most important were: a vision shared with the company's wider management, so that IT supported strategy; a close relationship with senior executives, especially the top manager; a willingness to pay attention to day-to-day IT performance; and an ability to judge the importance of changes in the business. These qualities are still critical, but dynamics changes quickly, and IT management have been confronted with new responsibilities in recent years. The perception that the manager has a good understanding of business processes means that their job descriptions are now likely to encompass HR and strategic planning. Like all managers, they have to be able to lead their departments through rapid change but they are often also expected to be the "corporate radar" for new technologies. Finally, today's IT managers need to manage relationships with an ever-growing range of external suppliers and contractors.

Some theorists see the work of managers themselves as information processors, not only in the execution of daily tasks but in the way they plan, co-ordinate, control and make decisions. Today, of course, managers are also expected to be competent users of PCs, e-mail, decision support systems and executive information systems. Those questions that previously were a matter for the data processing department, have now become questions of interest for the entire organisation, not least top management. Management in general must be responsible for setting up policies and guidelines for the information support and its quality (Earl, 1999b).

Falk and Olve (1996) have discussed a number of areas related to the IT managers' responsibilities, like deciding what information is most important for the firm's competitive advantage and sustainability. The management is responsible for drawing distinct guidelines on areas of responsibility, but should also determine the need for information. Moreover, they have to design a policy for questions regarding what information should be stored and the responsibility for maintenance of the storage, topicality value, and how the costs should be distributed for maintaining databases. Next, an authority policy needs to be developed, and in accordance to this, ethical guidelines. Who has access to what and what are the users entitled to do with the information? Further, they might have to define a common language and concept usage. Without conceptual models, an IT system is bound to fail. To continue, the quality of data is of crucial importance. The quality must be measurable, and the management must argue for its existence as an asset in the organization. Finally, safety is an IT management question in reality.

**Change management and knowledge managers** As a response to the dynamic in environment and change, a growing number of companies are employing chief knowledge officers (CKOs). Unlike the chief information officer, whose task is to oversee the deployment of IT, the CKO's job is to maximise the creation, discovery and dissemination of knowledge in the organisation. Recent research by Earl (1999b) files that the best CKOs fulfil four roles: entre-
preneur (willing to champion risky new initiatives); consultant (able to match new ideas with business needs); technologist (fully IT-literate); and environmentalist (able to design settings and processes to maximise knowledge).

The value of a knowledge manager is to bring knowledge issues to the attention of the business manager. Part of the need for a formal knowledge manager function comes from the nature of decentralised organisations. If the company is focused in groups, it is very difficult to take a bunch of businesses and make KM happen. "You need someone to charge around the company and ask questions" (Earl, 1999d). In certain organizations, the CKO could have the change management role, in others there is a need for a special role. The change management offers to analyze demands and possible improvements, to initiate development and to propose development projects. The change management should moreover be responsible for making the strategy known.

The IT department In recent years, companies have faced growing pressure to radically change the way they organize and manage the IT function. Earl & Sampler, (1998) argue that to manage IT effectively, companies must address two fundamental issues: the supply side, or the provision of IT services, and the demand side, or the identification and prioritization of application needs. The authors provide a four-stage model for transforming IT departments in which the balance of attention allocated to supply or demand shifts over time, but in which neither side is ever ignored. Organizations flounder when they tackle the demand side or the supply side in isolation, instead, they must recognize the crucial role of IT: to understand the past and predict the future of both technological advances and business needs while balancing the supply and demand management perspectives (Earl & Sampler, 1998).

Problems may arise from the changing nature of IT and from the fact that companies fail to recognise the needs of their IT professionals. Although they tend to prefer to work autonomously on clearly defined problems, promotional structures often reward them with more managerial posts - which have fuzzy responsibilities and entail political wheeling and dealing. IT professionals also have to work more closely and frequently with IT users. The solution may be to focus managerial attention on team behaviour and commitment while allowing a high degree of autonomy in technical matters (Earl & Sampler, 1998). Shick (2002) writes that it is important not to leave all high-level strategies to the CIOs, they certainly have to have the vision of where to go in the future but operational people must be involved in day-to-day decisions.

Commonly, IT departments are being sidelined by the increase in outsourcing. IT people are largely being left out of key corporate decisions, spending most of their time on the bricks and mortar of technology and application infrastructure. But it would be wrong, argue Feeny and Willcocks (1998), to write off the corporate IT function; across-the-board outsourcing can often prove to be an expensive mistake. Instead, the IT function should be analysed as a portfolio of activities to be selectively outsourced. Internal resources can then be focused on helping the business to grasp the opportunities represented by IT. Shick (2002) says one should look at the “info structure”, which may include everything from technology solution, policy, procedures, common vocabularies and business rules, through the selection of technologies.

2.2.3 The technical themes

The last them themes of the strategy proposition in this paper constitutes of the architecture and infrastructure, system interaction and security. It is associated with what Earl (1996) refer to as the “what” factors, or in other words, the information technology issues.
2.2.3.1 System architecture and infrastructure

Magoulas and Pessi (1998) states that no one has yet come up with specific criteria to determine what “good” IS architecture or infrastructure really is, despite this the decisions about IT infrastructure are critical to companies’ long-term competitive prospects. Broadbent and Weill (2002) present a framework for any company facing this challenge. The first requirement is deep understanding of the strategic context and of the degree to which the company should exploit synergies between its business units. Business and IT executives must collaborate to distil the company’s strategic aims. Next, the executives should specify how the company needs to deploy its IT and what level of infrastructure is needed.

![Figure 3 Designing an effective infrastructure](image)

The starting point for designing effective infrastructure is the corporate strategy. This strategy defines the key competencies and how the firm will deliver them to customers. In order to develop an IT infrastructure the senior management must have an absolutely clear vision of how the organization delivers its core competencies. It should be operations based and specifies the key cross-functional processes, the vision peels back corporate complexities to that the infrastructure is built around simple core processes, and cannot be compensated for with a higher spending. Money is not a good substitute for direction (Rockhart & Ross, 1999). The IT architecture involves converting the corporate strategy into a technology plan. It specifies data and key capabilities, and articulates what should be standardized at regional and corporate levels, likewise, it differentiates between the processes that must be standardized and those that must be integrated. The architecture debate is critical, because it distinguish between the capabilities that are competitive necessities and those that offer strategic advantage. However the natural tendency is to assume that extensive and standardized technology will compensate for it.

The Infrastructure should provide the capabilities for the architectures. However infrastructure is often implemented in pieces in which each change introduces the opportunity for more change. Moreover, since the infrastructure is the base on which individual systems are built, complicated automated process are often temporarily replaced by manual processes (Rockhart & Ross, 1999). Big Bang approaches are extremely risky, instead are incremental changes to be preferred. Stopping starting and even backing are parts of the learning process. The systems applications should provide a platform for additional capabilities, thus they may fill both an application and an infrastructure role. The three major applications are enterprise resource planning systems, web applications and performance support systems (Hamel & Prahalad, 1990).

The organisational process is relatively different phenomena from the functional perspective. New technological capabilities and global markets have emphasized new process like supply chain integration, customer and supplier linkages and leveraging of organizational learning and experience, all related to the three major system applications identified in the previous section.
The supply chain integration for example requires a tight connection between organizational processes and information systems. Rockhart & Ross states that until management can identify their processes from technology, an ERP that is supposed to provide the base for global integration, is not worth much. Where technology allows faster or better customer service firms are innovating quickly. Being competitive involves making more information available to customers, such as with on-line tracking systems.

Firms are rethinking their IT investments to support global operations and process orientation. This often requires a commitment by senior manager to understand the role of the systems, the infrastructure, and to specify a corporate strategy that dictates IT requirements. The entire pyramid of activities can be illustrated in figure 5.

**Investments** A trillion dollars a year is spent on information technology. Yet economists have found little correlation between companies' IT expenditures and financial performance. The reason for this says Thomas Davenport, is that most IT programmes neglect the human side of the information equation - that is, they take little account of what information people want or need and how they use it (Earl, 1999c). In the late 1990s, companies often bought huge quantities of IT for reasons that had nothing to do with their business models or long-term strategies. There was a "follow the pack" approach to IT investment that continues, to a lesser degree, today. For managers seeking to break away from fear-driven IT investment, McAfee, (2004) suggests that it is possible to select, adopt and leverage IT masterfully while spending very little on it.

There are two different common views; that management should administer on IT or that management consider it as a necessary evil and an inevitable cost. An important question for managers is if system development should be treated a part from costs from systems operations. The investments may depend on the perspective on IT; if it is regarded as a system to support business or if it is regarded just as IT-hardware. There is a beginning tendency to evaluate IT as the intangible assets it actually is. Generally speaking, however it is argued that investments should only be made only if improvements can be measured. Each investment in IT should be compared and evaluated related to other investments. One view is that the ones that order it should also pay for it, others argues it is the processes that uses the system to increase efficiency that should make the contribution. IT should be treated as any other intangible assets when it comes to accounting. The budget responsible is usually the IT-department. Moreover, it should be determined what competencies that should be internal and which are best bought or outsourced. The group software and building infrastructure should be financed centrally. When projects are implemented IT in a project then each project in each company pays for it. Good strategies for investment in IT go beyond the traditional IT client/vendor relationships and develop tight partnerships with their primary providers. Nevertheless, the intent for a new system must come from management though and not the IT department. The differentiator is to the extent companies are able to free up non-discretionary IT spending for strategically and operation ally high value investments, and stopping IT investments that will not produce the expected business value. Companies should also evaluate IT investments continually. Evaluation can be conducted by implementing a total-return-to shareholders mindset in the IT departments’ own culture and governance (Bergeron & Raymond, 1995)

### 2.2.3.2 System interaction

Dearden wrote some considerable words 1972; “The notion that a company can and ought to have an expert (or a group of experts) create for it a single completely integrated super system, to help it govern every aspect of its activity is absurd.” He should have been here today. As companies become international, the question of system interaction becomes even more important. The initiation of distributed computing and the Internet revolution has led to highly complex systems composed of hardware, software, people and operational procedures. Coexistence of so much technology
requires interoperability of the components in the IS/IT strategy and interoperability in turn, requires a set of overarching strategies to manage tough points and minimize conflicts.

The main difference between strategy for single systems and interactions between different information systems is the different interaction demands. The conflicting aspects of insight respectively independence must be considered. There are mainly two alternatives; to give partners full insight in each other’s business - an IT based view - or respect independence and adapt insight to each business process - the business based view (Hugoson, 2003). Furthermore, the demands should reflect to the interaction between subsystems within the enterprise. Such an external contact may involve formalized and slower interaction. This type of interaction is message oriented. IT management often bring up total integration as a solution to cooperative forms. The IT-view works well in a closed information system, where the business operations supported by the system and different parts of the system can be intimately integrated. The alternative to a fully integrated system is delineation or enterprise based structures (ibid.). According to theory, interaction should be standardized and fast if necessary information is not available in own system. Conflicts arise when independence is demanded in a fully integrated system. In strategic businesses partners seek an independent exchange where they have the freedom of action to reach the overall goal of the system.

Cooperative agreement system solutions thus require even more thought on principles for system interaction and structure. As the interactions are increasing in number and strategic significance the boarders are becoming more and more porous.

**Data exchange and computerized interaction** Most theories within the field of informatics do not cover cooperation between information systems according to Magoulas & Pessi (1998). Interaction between systems is essentially a question of computerized interaction between systems with maintained independence versus the system integration with dependencies of different kinds. The inter-organizational interaction (comprehends the interaction between systems outside the own structure), requires still more emphasises on the independence in interaction between systems.

Manual data exchange involves no computerized interaction at all and often means double updating and requires heavy manpower. It is independent indeed, however responsibilities are not clear. A common data model with interaction exist through stored data is another option. It is reachable and acceptable when few systems. Access gets worse the more systems you apply since the information stored in one place (Hugoson, 2003).

Business based messaging is an option for communication with freedom of action, defined responsibility, storage in each system and independence in operation. The messages is not part of the database, thus a business model must be designed, presenting the interaction agreement between processes. If messaging is applied for systems interaction, then each message can and should be defined and described without dependencies to data storage in any system. For each message sent, the owner must define and agree on characteristics. Normal interaction between processes is the basis for business based messaging. This implies that every message corresponds to some kind of action in the business. Business based messaging allows computerized interaction between information systems outside the organisation, with a high degree of independence. Kobayashi et al (2002) explains that message integration is messaging and data transformation technology enabling all applications used in a real time processing style. It is used to exchange data between the outer systems and the inner core business systems. A type of middle-ware called a message broker is typically utilized. Another type of integration is a file transport and data transformation technology enabling all application in a batch processing style to communicate thorough the inner core business systems in different departments.
In the domain of supply chain management (SCM), a concept called business process integration (BPI) is commonly mentioned. The two characteristic policies included in BPI are a) to design the minimum set of business processes for real time information sharing with planning packages without changing other processes and b) to integrate several systems with enterprise application integration (EAI) technology and to manage their execution with a workflow tool. Based on these assumptions, Kobayashi et al (2002) propose various integration adapters. Their evaluation shows that using BPI, a target system can be planned for and developed with less manpower, in less time, and with higher quality than previous methods.

2.2.3.3 Security & risk attitude

The information intense organization is vulnerable and the commercial risks are therefore very high. Companies are becoming increasingly dependent on that information in a business is protected. The technical standards ought to be high and the relevance of it should be stressed to the workforce.

Whether thinking of nations, enterprises or systems, the openness of systems has its benefits and limitations, therefore, a strategy has to include a security policy. Risks emerge from operations, information systems or from the relationship between them two. While open systems create new opportunities they also present new risks. Firms need to view the global environment strategically while leveraging its role, and yet guarding against new exposures. Partnerships may only improve logistics and improve supply chain problems, if conducted with a secure mind-set. Secrecy, integrity, availability and traceability are all important factors that need the attention of top management. Privacy initiatives is also a matter of strategy, because business goals and customer loyalty is highly integrated. It is also an ethical question, forcefully regulated. Any and all measures necessary should be taken to protect private information. Such information should be available only to those who need to know, and only to the extent that they need to know (Raval, 2001). Hardware and software must be considered carefully regards to network infrastructure and quality protection. Encryption is the one way to protect data transmission. The key encryption technique builds on a type of cipher that ensures confidentiality, integrity and authentication. Confidentiality means that information should not be open to unauthorized. Integrity signifies information will not be accidentally or spitefully changed or destroyed during transmission. The public/private key techniques can ensure users or machines identity in a communication system. Saita (2003) has investigated the difficulties of communication and trust in the networked world and she argues public key infrastructure and digital certificates have yet to show that they provide reasonable assurance at a reasonable cost. Additionally, issues of trust in the certificate authority remain at the core of the solution. Who do you really trust to certify others, and what criteria do you use to determine if an entity should be certificate authority? The networked coalition will pay the price of risk. Lack of trust brings an army of control and security measures. In a global company therefore, although within the same concern, we are likely to see more of boundary controls and communication controls. Because the physical environment is less emphasized in the connected economy, boundary controls hinge upon the logical side of the systems rather than the physical side (Raval, 2001).

2.2.4 Review

A generic strategy document is worth nothing, because if it is generic the competitive component is gone, the prerequisite in order to gain any advantage with the IT strategy. Although no sustainable advantage can be proved, by accepting IT’s role as an enabler of competitive advantage one can move forward and define how to combine business architecture with IT architecture. The general approach has been to cast the task as a technology diffusion problem and to find ways to reconfigure the technology and “align” it with business goals and business processes.
Traditionally the IT function has been viewed as a support function, not essential to the business management of the firm.

Knowledge management is the process of systematically and actively managing and leveraging the stores of knowledge in the organization. Roles can be categorized as system users and system responsible, then responsible is in turn divided into three different roles; business and IT-management, change management and IT providers. To utilize the metaphors again, the IT department is the house builder and the B&IT-management is the town planner. The change management must analyse demands and possible improvement and initiate development projects. Strategies for roles in IS/IT strategies are flawed. In reality, the responsibility often ends up at the data department, regardless of what the intentions were, because managers are playing very passive part in the strategy.

The starting point for designing effective infrastructure is corporate strategy, which defines the key competencies and how the firm will deliver them to customers. The IT architecture involves converting the corporate strategy into a technology plan. The Infrastructure should provide the capabilities for the architectures, while the systems applications should provide a platform for additional capabilities. There are two different common views on IT spending; either it is regarded as a productivity investment or a cost. A trillion dollar a year is spent on IT yet researchers have found little correlation between spending and performance. The technology component of IT is only strategic in the sense that it helps an organization define and achieve strategic goals; otherwise it is simply a tool/commodity like the telephone. When discussing interaction between systems, there are mainly two alternatives; to give partners full insight in each other’s business (an IT based view) or respect independence and adapt insight to each business process (the business based view). Secrecy, integrity, availability and traceability are all important factors that need the attention of top management. Privacy initiatives is also a matter of strategy, because business goals and customer loyalty is highly integrated.

2.2.5 Realization

So far our discussion has covered the certain aspects of the strategy formation. The implementation of the strategy is even more complicated and involves even more people than the formulation. It covers all the themes discussed previously but if the forming should be performed bottom up, while the formulation is top down. Therefore, it also may involve different people, or require that some key-positions take new responsibilities. Ideally it should be an interaction between process development and IS/IT development, resulting in the delivery of new processes to process development - improving processes by IT support. If the formation is about awareness the realization is about knowledge. It can be summarized simplified, in six steps.

1. Business planning (to articulate what is the organisation), and to describe the business processes, simultaneously with specifying the IS needs.

2. Specify the governance model and the project planning process. It is conducted with a top down approach where responsibility is in IT management. The project oriented realization includes a change manager.

3. Detail the future structure and systems interaction. The structure of systems and its subsystems is specified.

4. Specify and plan the IT infrastructure, an analysis that should cover both aspects of the company including IS/IT and processes development.

5. Develop and implement security rules

6. Implement methods manuals and training
The process of moving from a strategy to an implementation of the architecture involves mutual education of senior business and IT managers. Management need to schedule IT-business contact time in which focus of the discussion is business strategy and IT capability. This allows IT management to identify opportunities and clarifies capabilities and the costs of the technologies while senior management specifies business priorities and articulates evolving strategies. (Rockart & Ross, 1999).

2.2.6 Strategic planning

Planning is about setting common goals, which indeed is essential for a global business. Strategic planning is a step-by-step development of an enterprise-based approach for the future structure versus the structure in use. Just because it deals with future structures, I have chosen to present it after actual realization section.

Effective strategic planning in this new decade must meet three overriding criteria: it must be a rapid process, produce brief but very clear output, and provide an integrated context from which more detailed planning can take place. For strategic planning to respond rapidly to the right priorities, it is essential that the process start with prioritization and framing of the strategic questions to be addressed at any given phase. Generally this is best accomplished through a small subset of senior IT managers, preferably including the IT director. Once the highest priority areas have been identified, and appropriate questions framed, the work of strategy development can take place. For integration of the strategies, IT organizations need a virtual team of strategists for this phase. The virtual team should include qualified membership from the major IT constituencies, whose role it is to represent the goals of their specific organizations in the overall development process (Grover & Segars, 1999).

According to Earl (1989) three questions are especially crucial for management when engaged in strategic IS planning; to clarify the company’s needs and strategy in terms of information systems, to evaluate the need for existing systems and find new strategic opportunities with IT. Strategic planning for IT support is also the key concept for a model carried out by Wetherbe (1988), where the basis is a comparison with town planning leading to a long term town plan that is approved and sanctioned then successfully fulfilled. Strategic planning for information systems thus can be seen as a limited number of sequential activities where the focus is primarily on deciding on what system should be developed during the coming four to five year period (Wetherbe 1988). A criticism to this is the focus on development of new information systems, which isolates systems development from other forms of development. The focus is concentrated on the management of system development projects and resource use at an aggregated level.

Goals and objectives for IT support According to literature the main goals of strategic information systems/information technology planning (SISP) are to align investment in IT with business goals, to exploit IT for competitive advantage, to deliver efficient and effective management of IT resources and to develop technology policies and architectures. More broadly SISP may be used as a generic term to cover the following activities: information planning, IT planning, information strategy formulation and IS strategic planning. Heng and Newman (2001) writes with a sociological approach to strategy; looking at the SISP goals beyond their original purpose of them. Their study suggest that among other things, SISP is mainly used to organize thoughts and articulate information planning activities, to interpret past activities, to bring a sense of control and to provide norms as part of social legitimization.

Goals can be expressed on three levels; objectives, primary goals and ultimate goals. The latter is the reason for doing business, they do not change over time and are not always operational, but it is in the top of the organizational structure. Primary goals are tools for reaching the ultimate goal. They are changeable for a certain period, must be operational and they imply struc-
ture changes. Change, in turn, must be external but performed from the inside. Finally, objectives are about what’s to be reached through operational decision, which must be operationally articulated to enable good control and they appear at different levels. The objectives for IT support depend on the system paradigm chosen. In the IT based perspective it is simplicity and efficiency; to create simple cost efficient information systems.

The business based view stresses dynamic goals of IT support; flexibility, changeability, and replaceability. IT support should shorten lead-time and assist business planning. It requires a step-by-step realization, computerized interaction between systems and a decentralized responsibility for the system (Feeny & Willcocks, 1998). Most systems are not like the characteristics of the business-based view. The reason may be lack of strategic planning and “one system theory”, as long as a stable data model is being built, failure is unconditional. Magoulas and Pessi (1998) argue poor IT-system (for example islands of information) is the result of the failure of traditional forms for IT management to create suitable working information environments. To visualize the problem today is complex but easier than previously. It is assumed that this is a result of an underestimation of the significance of overall integration and coordination of information systems, or a narrow focusing on single information systems. It may also be an effect of deficiencies in existing guidelines for the conceptualization and design of information systems and for determining the suitability of information system architecture, mainly due to contradictory theories of design.

Feeny and Willcocks (1998) emphasize the objective of the strategic alignment between business and technology. They suggest business systems thinking is about envisioning the business process that technology makes possible. Experts in business system thinking understand connections and interdependencies in business activities. They build and communicate holistic views of current organization as a base for future structures.

**Change & future structures** Strategy documents, like models, are a snapshot in time, and for these reasons they cannot incorporate any element of competitive interactions if they do not include an action plan for change, and future structures (Hidding, 2001). The impact of change on companies on the global market place is rapid. Therefore, firms need to be proactive, assessing the changing landscape continually. The new technology and its applications appear to be easily predictable, but the predictions have greatly diverged from realities in important areas. Competing in the global reality is not a mere calibration of competing in a traditional economy. The new environment is far more unpredictable. New competition comes in different shapes and sizes. Therefore, a constant watch of the landscape is of great importance to business entities. Information managers will often have a great deal of input in evaluating the changing landscape of competition. The changing landscape involves an enhancement of risks but it also delivers higher payoffs.

The greatest obstacles to change may foremost be related to political resistance. Maybe even more difficult to overcome is challenges of clarifying the firm’s strategic vision and defining IT priorities. It is an iterative process, senior management would articulate a vision and IT management would then estimate time cost and both capabilities and limitations. I the strategy is clear enough, it would lead to an awareness, and efforts to install an infrastructure that finally meets all possible need or to limited investment in infrastructure that was not strategically aligned with the business (Henderson & Venkatraman, 1999)

### 2.2.7 Review

The realization of the strategy is even more complicated and involves even more people than the formulation. It covers all the themes discussed previously but if the forming should be performed bottom up, while the formulation is top down. Planning is about setting common goals, which indeed is essential for a global business. Strategic planning is a step-by-step development
of an enterprise-based approach for the future structure versus the structure in use. The objectives for IT support depend on the system paradigm chosen. In the IT based perspective it is simplicity and efficiency; to create simple cost efficient information systems. The business based view stresses dynamic goals of IT support; flexibility, changeability, and replace ability.

2.3 A global environment

In any strategy, one of the most vital concepts is environmental scanning. As this paper concerns global IS/IT strategies in a global environment, it is vital to review the same. A firm's external environment is defined by such factors as the competitive structure of its industry, the relative power of buyers and sellers, the basis of competition, whether the industry is growing, shrinking, or stable, the state of regulation, and the state of technological deployment. Of particular interest is how the firm is situated in its external environment—for example, the competitive position of the firm, its relationships with customers and suppliers, and its relative technological capabilities. The external environment and the firm's position in it, influence which information systems a firm chooses to implement, the design features of those systems, and their effects for the firm and the industry and management should attentive to opportunities and threats that are surrounding the businesses. The realization of an IT strategy on a business unit level must include detailed information about the environment too according to Frenzel (1996).

Thus trends of social, economical, technological, legal and political nature must be considered in order to support the businesses with an IT strategy. Moreover, organizational aspects and approach to internationalization are of importance. Three themes will be analysed; global business strategy and global information technology issues and organizational structure.

2.3.1 Global business strategy

It is not my purpose to present a complete theoretical framework on business strategy, as excellent frameworks already exist. I am satisfied with establishing the fact that many information systems projects in organizations today are closely linked to corporate strategy. In some cases, the information system is a key element in executing a marketing or manufacturing strategy; in other cases, it is at the very essence of the strategy. Some business strategies are more dependent than others on timely, accurate, and complete information on overseas operations (Bartlett, 1986). For instance, in the past, home offices typically conceded considerable autonomy to their foreign businesses (Bartlett, 1986). Worldwide reporting and information requirements were minimal under these "country-specific" strategies. As information technology advanced into foreign facilities, it was primarily used to serve local information needs. It is not surprising then that in 1985, Freeman (1985) found that IT activities were relatively decentralized to company units for most U.S. multinationals.

Even less on a global level, a sustainable competitive advantage exists. A number of credible strategists, including Hamel and Prahalad, Deming, and D’aveni argue that few if any business strategies are long lasting, since the environment is so dynamic; there are no secret formulas that cannot be copied. Indeed, a company is most vulnerable to competition when at the top of its lifecycle. D’aveni suggest that the goal of strategy should be to disrupt advantages instead, continuously innovate and invest in new technology and sophisticated infrastructure. Numerous Japanese companies can exemplify it; Honda and Sony are first-class examples. The focus of the strategy should be to create tomorrow’s competitive advantage faster than competitors

---

8 Only a quick note on this subject as the environmental scan is not directly part of the purpose of this paper, the theory may be studied more detailed in Porter (1996) or any other classical text.
can copy the today’s technologies. An organizations capacity to improve and learn new skills is the most competitive weapon for competition.

Raval (2001) argues that the international aspect changes the theme of competitive advantage to comparative advantages. The basis for creating synergies of global integration is the comparative advantage, and this can be achieved with cross-cultural collaboration. The concept recognizes that between two entities there are differences in competitive traits. The basis for creating synergy across entities is what each entity does best and how this can be shared with the other for mutual benefit.

### 2.3.2 Global information technology

The rapid globalization of business and the increased role of IT in shaping corporate strategy indicates that the globalization is a topic of considerable importance to information systems practitioners. My review of previous research suggests that the information systems research community has generally neglected this important area.

Faulkner and DeRonde (2000) call international IT "a major, largely unreported, unstudied IT story". Feeny & Willecocks, (1998) argue that the role of information technology in supporting and enabling the globalization of business has been "understated and certainly under-explored" (p. 36). When international topics have been addressed by the information systems research community, it has often been as a replication of American research in a different country. This type of work has focused on countries or cultures as the primary unit of analysis. By contrast, the focus of this paper is the perspectives of IS/IT strategy across boarders, which has a cultural part, but that is not the entire solution.

A few studies consider global IT strategies and the literature, however, offers some guidance for choosing between centralized versus decentralized architecture. Keen (1994) argue that the more standardized the business process across home and foreign locations, the larger the fraction of the system will consist of the "common core." The larger the core, and therefore, the smaller the need for local adaptation, the more sense a common global application makes. Nevertheless, care must be taken; relatively minor differences in local markets can mean major requirements for local tailoring.

In recent years, business experts have argued that leaps in information technology have made possible a new world of seamless collaboration among businesses, one that will bring enormous gains in efficiency and flexibility. Carr (2004) concedes that the universal IT infrastructure that has been developed over the past decade does create pressures to homogenize business processes and organizations. But he warns that it is treacherous for companies to assume that the "death of distance" brought about by new communications technologies will mean the death of the company. New technologies will never conquer cutthroat competition, and managers need to be wary of alliances, outsourcing contracts and specialization initiatives that foreclose opportunities for advantage and put long-term profitability at risk. Companies will always need the walls they have so carefully erected over the years to protect their advantages. Because mankind lives in open systems, there is always cross boarder traffic. Systems interface with each other even while keeping their boundaries, although the boarders are indeed becoming more porous, that is, the interactions are increasing in number and strategic significance (Raval, 2001).

**From independence to dependences** When systems interact over boarders their independence will still be recognized, even asserted in certain ways. However, there is a clear understanding among researchers that the value created is increasingly and unquestionably a function of dependence on others. Thus, a business would most likely adjust its systems boundaries allowing for greater interaction and therefore synergy, at interfaces with customers, vendors, em-
ployees, investors, banks and other stakeholders (Raval, 2001). The collaboration whose intent is to make systems more integrated, or to scale a shared system in time and space can be expected to create competitive advantage, raise barriers to competition and possibly offer a first mover advantage globally. Interdependence, and thus interaction, is a matter of competitive advantage. Timeliness, reliability, productivity and efficiency are some of the benefits of mutuality, without which businesses today would struggle to compete with others. Thus, the question is that of how to do it, not whether to do it.

**International data sharing** Global applications present other data management challenges. Because users of global applications often access the same worldwide database or because data from different foreign locations are intended to be shared and consolidated, global systems require well-defined and standardized data definitions. In fact, Broadbent and Weill (2002) argue persuasively that commonality in global systems should be established primarily through standardization of data rather than standardization of programs.

**Globally standardized infrastructure** D'Souza and Mukherjee (2004) believe businesses increasingly will choose an “architect” approach to IT adoption. IT departments cannot be viewed as “stand-alone” technology service providers. More specifically the specific information technologies for example electronic imaging, local and wide area networks, expert systems, which support current business strategy initiatives or could shape new business strategy initiatives for the firms (Henderson and Venkatraman, 1999).

**The costs of globalization and standardization** Nothing comes without a cost, and diversity is no exception. Embracing diversity, randomly or in a planned manner, has qualitative and quantitative costs attached to it. A strict business reason for adopting or embracing diversity is cost effectiveness, that is, value of the action exceeds its costs (Raval, 2004). One cost of diversity is in different ways of thinking, acting, and communicating. There is a much greater likelihood of misinterpreting each other, and this could cause errors, delays, and inconsistent outcomes or actions. To diminish this risk differences that do not contribute to creativity and innovation (or such other major benefits) should be avoided. Training, standardization of procedures and vocabulary, protocols, and policies are some ways to reduce them. Where differences cannot be eliminated, they should be recognized and employees' awareness should be brought to light.

**Outsourcing IT** Among the global or international companies, the outsourcing alternative increasingly common and must be reviewed. According to McKinsey & Co., information technology-enabled outsourcing services are expected to grow fifteen-fold by 2008, delegating one or more of their information technology-intensive business activities to an external service provider, thereby using IT as an enabler for performing activities including developing service designs, coordinating service deployment, and delivering services. Increasing competitive pressures and cost savings intentions drives the increase in outsourced activities. Nevertheless the facts from Dun & Bradstreet’s Barometer of global outsourcing, shows that over each of the four years in companies have reported that between 20% and 25% of all outsourcing relationships fail in any two-year period. Half of the relationships will fail within five years. The reasons cited for failure are remarkably similar across all types of relationships. Nearly 70% of the respondents note that the outsourcing supplier ‘didn’t understand what they were supposed to do’ and ‘the cost was too high and they provided poor service. In spite of reported problems, more than 30% of the organizations that have already outsourced one business process are actively searching for additional outsourcing opportunities in other areas (Ozanne, 2003). Some companies even outsource the IS/IT strategy itself, wise or not. Falk & Olve (1996) is summarizing the pros and cons of outsourcing IT and argues it is not an economical alternative that should be compared with the costs for IT, but an overarching strategic question for the organization, despite the economic theories on transaction costs as the base for what should be
bought over respectively exist within a company. There are no “best solutions” but the deci-
sions should be based on whether the needs are strategically central or not. Instead, “outsour-
cing reflects the need to minimise transaction and production costs for clearly defined inputs to
the value adding process”. “The decline in the costs associated with external sourcing have to
do with the ability of firms to monitor quality of external suppliers”. Although cost-based is-
sues do play a role in coalitions, it not the major driver to internationalize (Alter 1996). To sum
up on this heavily debate area (which not is the purpose of the paper) it can be said that critical
activities should be kept internal. At the same time commonly known techniques and processes
can be outsourced to the most cost efficient supplier. The tricky part is to find a good balance
between outsourced and own processes.

2.3.3 Organizational structure of the firm

A firm’s internal design element determines its structure and its culture may influence system
design as well as system success. Organizational structure refers to formal aspects of organiza-
tional functioning, such as the division of labour, hierarchical authority, and job descriptions
(Silver et al 1995). Structure typically includes whether the firm is centralized or decentralized,
whether it uses a divisional, functional, matrix, or networked organization, its reporting rela-
tionships, and its reward structure. Organizational structure can influence information system
consequences in a number of ways, of which some will be treated under the section of knowl-
edge management.

Based on the locus of authority or devolution of responsibilities the responsibilities can be de-
scribed as bottom up or top down (Chakravarthy & Doz 1992). The top down planning is
characterised by limited participation of lower-level mangers in the initiation of the process,
meanwhile the bottom up perspective is characterized by high levels of functional involvement
in the initiating phases. In this instances the planning process begins with ideas and proposals
submitted by operational and functional managers as inputs into the overall corporate plan.
The role of top management is that of overseer or gatekeeper.

Historically most organizations could be characterized as either centralized or decentralized in
their organization structures as illustrated in figure 5. Nevertheless companies must move be-
ond simplistic organisational views that polarize alternatives between world product divisions
and country based structures. Headquarters will have to take strategic responsibility in some
decision areas, subsidiaries must dominate in others (Hamel & Prahalad, 1990). Subsidiaries can
provide headquarters with competitive information and learn about world competitors from
the experiences of other subsidiaries. They must fight the battles on behalf of larger strategy
and develop systems and infrastructure to incorporate global and local perspectives into tactical
decisions (Hamel & Prahalad, 1990). Simply arranging the organizational chart cannot solve or-
ganizational problems; fundamentally new roles must be adopted.
2.3.3.1 Approaches to internationalization

Many researchers has explored the concepts of internationalism, there among Levitt (1983); Bartlett et.al. (2004). The focus in these various approaches is developing the appropriate balance between global integration and local responsiveness- effectively meeting local demands while capitalizing on worldwide efficiencies and advantages. It has indeed led to many different formulations of differences in global strategies among firms. In essence, the fact that the definitions has changes during the last two decades, highlights the importance of strategic and organizational integration and, thereby, management integration of operation located in different countries.

The multinational operates in a number of countries and adjusts its product and practices in each while the global corporation operates with consistency as if the entire world were a single entity. The latter perspective is established and favoured by Levitt (1983), nonetheless criticised by many later researchers as an opportunistic picture of reality. Levitt argues the drift toward homogenization of the world is a force we can no longer fight. Inarguable, the most effective world competitors incorporated superior quality and reliability and indeed the customers will prefer a company that forces costs and prices down and pushes quality and reliability up. “The global corporation knows everything about one great thing, but if that thing is not enough to be competitive on the world market, the global is bound to loose”. However, it is doubtful that different cultural preferences, national tastes and standards and business institutions are solely traces of the past. The global approach requires considerably more central coordination and control than the multinational and it is typically associated with an organization structure in which various product or business managers have worldwide responsibility (Bartlett, 2004). In such a company, research and development, knowledge management activities are typically managed from the headquarters and most strategic decision are also taken at the centre. The global model does not mean that firms should necessarily pursue universal strategy. The common global strategy need to be designed to efficiently accommodate local add-ons for local responsiveness. The add-ons might reflect differences in architecture or the strategic importance of subsidiaries to headquarters.

Nevertheless, many worldwide companies recognized that the demands to be responsive to local market and political needs ant the pressures to develop global scale competitive efficiency were concurrent, although conflicting. The emerging requirements from companies were to become more responsive to local needs while retaining their global efficiency (Bartlett et. al., 2004). Indisputably, international companies cannot expect to succeed in the international environment unless it has some such distinctive competence so as to overcome the liability of its foreignness. Transnationals are, according to Bartlett et. al., (2004) companies whose key activities and resources are neither centralized in the parent company, nor decentralized so that each subsidiary can carry out its own tasks on a local-for local basis. Instead, resources and activities are dispersed but specialized and integrated an interdependent network of worldwide operations. Hence, the transnational mentality brings back the world national into the terminology. To achieve worldwide advantage, both efficiency and innovation is important, and innovations and knowledge cans arise in different parts of the organization. The transnational firm focuses on exploiting each and every goals-means combination so as to develop layers of competitive advantage by exploiting efficiency, flexibility and learning simultaneously. To achieve this, the transnational must develop a very different and ambitious strategic configuration of assets and capabilities than the traditional global company structures. The transnational parent child configurations create structural units in the form of marketing teams or manufacturing subsidiaries in various countries. Each subsidiary interacts with the parent corporation through a flow o capital, providing remittances to the corporation and receiving developmental funds from it (King & Sethi (1999). The are lesser centralized and markets are rarely integrated, because the functional areas of the subsidiaries especially finance marketing production and logistics, operate independently of each other as ell as of the parent corporation. Value chain coordination is
also low because subsidiary is responsive only to local needs and maintains a simple organizational structure. In contrast, the global firm is highly centralized and the parent corporation controls all foreign operations. However, decision-making is often fairly centralized.

2.3.3.2 The triggers

Thus the approaches to foreign market entry are varied but generally depending on the level of control and commitment of the partners. The triggers to internationalization are also essential in interpreting the views of global IS/IT. By and large a company internationalize from the forces of scale economies. A second factor, that Bartlett et. al., (2004) found to rarely be the original trigger, is global scanning and learning capability. A third benefit is the advantages of competitive positioning. The motives to form an alliance are usually triggered by a lack of a certain competence or a resource. The resource that the company mainly contributes with is commonly the reason for the cooperation. Resources can be of financial, physical, management and technological type, to name a few. Porter & Fuller, (1989) argue that the reasons for why companies cooperate can be divided into internal and external reasons. According to the transaction cost theory, alliances are formed when the cooperation alternative is less expensive than developing resources internally or buying them from the market. They are hence an important possibility in gaining and developing knowledge. The partners can learn a lot from each other, even in a financially unsuccessful environment. Moreover there are opportunities to develop strategic competencies, and to foster the learning within the organisation.

2.3.4 Culture

Culture refers to the shared values, basic assumptions, and behaviours of organizational members (Hofstede 1991). There is no shortage of advice available to guide managers about to embark on an overseas mission. Managers are given very broad advice, such as "Keep an open mind." Without more context, a manager may assume that having an open mind will produce the same results in Helsinki or Beijing as it does in New York City. And that assumption, according to Light (2003), and decade-long studies of cross-cultural leadership, is a mistake. Although the impact of culture and cultural conflicts are inevitable in an international coalition, it may even be of advantage to the firm if utilized in a productive and creative manner, leading to more innovation, a greater variance in ideas and enhance dynamism leading to a better group performance.

Like organizational structure, culture can influence the consequences of an information system. For example, in an organization that values individuality over teamwork, groupware systems—especially those that operate with anonymity—may fail to achieve their desired consequences of promoting productive collaborative work. On the other hand, when coupled with other measures, such as groupware system might be used as part of a conscious effort to make the corporate culture more team oriented.

Levitt (1983) proposes that consumers have become alike in all parts of the world through the homogenization of needs and desires. This homogenization has resulted from the "proletarianization of communication and travel" (p. 83). It suggests that cultural differences across international user communities may, to some extent at least, be converging.

When planning for a knowledge management strategy one must be aware of the relationship problems within knowledge sharing. The majority are due to cultural differences. Steensma et al. (2000) conducted a study on how Hofstede’s (1991) cultural dimensions are influencing coalitions. Her research supported others, like Faulkner and DeRonde (2000) who suggest that 21% of the unsuccessful cooperation in coalitions is due to culture. The study, which was performed in Sweden, Norway, Australia, Mexico and Indonesia, showed that coalitions are more common in feminine cultures. It can be due to the fact that cooperation and the thought of recip-
local profit is more accepted in feminine cultures, while masculine cultures focus on competition. The fundamental idea of cooperation is that both parts shall benefit from the collaboration and this is in conflict with the masculine cultures’ perspective of one winner and one looser. Steensma et al. (2000) also argues the level of individualism in influencing the structure of the alliance. Individual countries rather work in contractual agreements while collectivistic countries are more willing to give up part of the control in exchange of a close relationship. The potential for culture conflict is particularly high where there is a high level of interdependence and interaction between the partners.

2.3.5 Review

The external environment and the firm’s position in it, influence which information systems a firm chooses to implement, the design features of those systems, and their effects for the firm and the industry and management should attentive to opportunities and threats that are surrounding the businesses. The international aspect changes the theme of competitive advantage to comparative advantage. The basis for creating synergies of global integration is the comparative advantage, and this can be achieved with cross-cultural collaboration. Embracing diversity, randomly or in a planned manner, has qualitative and quantitative costs attached to it. Among the global or international companies, the outsourcing alternative increasingly common, driven by competitive pressures and cost savings needs. A firm’s internal design element determines its structure and its culture may influence system design as well as system success. Organizational structure refers to formal aspects of organizational functioning, such as the division of labour, hierarchical authority, and job descriptions. Firms take on different approaches to internationalization, international, global, multinational or transnational. When planning for a global strategy one must be aware of cultural differences. Culture refers to the shared values, basic assumptions, and behaviours of organizational members.
2.4 Literature review questions

From the review of the literature and the figure modeled above, new questions can be raised from three studies on related areas. There are three questions that seem to be relevant, uplifted by the theoretical review and previous research. I believe that they can be answered within the framework of this thesis as they are highly related to IS-IT- and IM themes.

- Is there a relation between management perspective (their interpretation of the IS/IT strategy and the IS paradigm)? (testing the research of Earl, 1989).
- Does the organizational structure have anything to do with the way IT is architecture? (testing the research of King & Sethi, 1999).
- The managers’ role and status influence on information management? The responsibility of the IS/IT strategy often end up in the IT department, and managers take a passive role in the realization (testing the study of Axelsson, 1995).
3 Method

The purpose of the method is to give the reader the possibility to replicate and evaluate the methodological procedure. Therefore, the methodology chapter contains a detailed description of the research steps, such as an introduction my research strategy, the approach to science, method for data gathering, and a description of how the study will be analyzed. The choice of method is elected to serve the purpose of the paper.

3.1 Introduction to my research strategy

The study is of exploratory and explanatory type, because I aimed at finding the components in a strategy and determine what global IS/IT strategy is. The study also contains a descriptive part, explaining how strategies are interpreted. The theory developing rational is realized with a few guidelines to global IS/IT strategy formulators. The background presents a few studies in the area, making the need for new research evident. Patel and Davidsson, (1994) argue that an exploratory study should be chosen when there are knowledge gaps in the chosen problem area.

3.1.1 Knowledge characterizing

Hence by a thorough literature study and a pre-study (exploring) I wished to shed light on the perplexities within the area (explaining). By conducting interviews; through questions and observations I aimed at describing how IS/IT strategies are interpreted in practice. Descriptive knowledge is according to Goldkuhl (1998) knowledge that is self-explaining. I drew conclusions from the similarities and dissimilarities I found in the different perceptions of the interviewees. Finally my analysis aims to combine the prior intentions in order to create new knowledge. This is what Goldkuhl refers to as normative knowledge, i.e. guidelines or directions. The broad research spectrum was a conscious choice to cover the complex area of IS/IT strategy and the various people affected.

IS/IT strategy is not an exact science, because it does not have determined or fixed components and the research objects are not obvious. Neither are the definitions unambiguous. My perspective is that theories must be tuned to reality to be anchored and acknowledged in the scientific world. In this paper, the pre-study and the literature studies served as the basis for knowledge gathering, and the qualitative study deepened it with interviews and questionnaires. Knowledge characterizing is utilized to describe the type of knowledge to be developed. It is conducted in order to determine the strategy for the process of writing an academic paper. One of the most essential ideas in knowledge development according to Goldkuhl is that the method chosen should be determined from the problem discussion and the purpose. This has indeed been an important principle of my way of working in developing the method.

3.2 Research approach

There has been a shift in information technology and information systems research. What used to be focused on the technological issues is today more focused on the managerial and organizational themes. This has lead to an increasing interest in the qualitative method of research. Quantitative means something measurable in terms of numbers, weight, time, etc. The term qualitative, on the other hand, stands for “softer” characteristics, social phenomenon and such categories in our environment as human relations, perceptions, interpretations, judgments etc (Lunddahl & Skärvad, 1999).

The area within which I aimed to generate research treated strategies and activities. The knowledge is about “soft” phenomena and therefore difficult to quantify. Holme and Solvang (1997) describe how quantitative studies deal with converting data to information through statistical
information. With my purpose as a basis a strictly quantitative study would be senseless. I argue my research questions required a qualitative analysis method to reach necessary depth. Furthermore, it gave me the possibility to get deeper involved in my investigation than if I would measure and show things statistically.

The qualitative research method was developed to enable researchers to study social and cultural phenomena in the social sciences area. Qualitative data sources include participant observation (fieldwork, pre-studies etc.), interviews and questionnaires, research documents and texts and the researcher’s impressions and reactions. The primary reasons for doing qualitative research, as opposed to quantitative research, comes from the acknowledgement that the one thing that distinguishes humans from the natural world is it our ability to talk. Qualitative research methods were designed to help researchers understand people and the social and cultural contexts within which they live. Yin (1984) says that one of the strengths of a qualitative research is that it helps people see the worldview of the studies – it simulates their experience of the world. In adherence to the purpose, this is important to achieve since I am describing the situation from a “multi-perspective” where the environment is totally different from my, and possibly, the reader’s background. It should be clear that the word ‘qualitative’ is not a synonym for ‘interpretive’ – qualitative research may or may not be interpretive, depending on the underlying philosophical assumptions of the researcher.

My approach was to combine several data gathering methods and iteratively utilize them to gain further understanding. A research method is a strategy of inquiry which moves from the underlying philosophical assumptions to research design and data collection (Lunddahl & Skärvad, 1999). I believe my approach is of hermeneutic type, both the data gathering and the data analysis. Because the paper is focused on giving a deeper understanding of the way IT is viewed in coalitions today, I found and interpretive mode like the hermeneutic spiral appropriate for my research.

The spiral starts from the bottom, where the researcher has a pre-understanding of the problem that is about to be researched. This pre-understanding helped me formulate the research questions, problems and ideas, with which I started to communicate with the research material. The word communicate is used to point out that it is a two-way process; it does not need to be a communication with humans it could also be communicating through books, observations and behaviors. This information was used in the pre-study, where after information, and research questions were revised again. The insights gained from the material gave me new understanding, literature was read again and re-evaluated. I then further communicated with people...
involved in the field and asked questions that generated even more new understanding. This prepared me for the last step in the data gathering, the interviews with the companies. The results from these made me ready to analyze the gathered material in an integrative form.

The significant characteristic of hermeneutics is its concern with meaning, which cannot be quantified. In the hermeneutic research method, one person, i.e. the researcher, strives to understand another person’s behavior, and the most important way of understanding is through communication (Eriksson and Wiedersheim-Paul 1997). The way in which communication is vital to the hermeneutic approach is shown in the hermeneutic spiral, which also is a good illustration of how I have planned my research.

3.3 Data gathering

A “snowball” approach to data gathering was utilized. This is a term that Erikson and Wiedersheim-Paul, (1999) utilized in describing how data can be gathered step by step. Utilizing the information to understand the source one can consequently assail the new source of information. The snowball manner commonly includes the use of a pre-study, since experienced interviewees may have interesting ideas of where to continue the research. The contact with Mr. C. at IFS Argentina, Chile and Uruguay helped me to come in contact with the right people in Swedish-Argentinean companies.

The choice of research method influences the way in which the data is collected and the choice of data employed is crucial to the outcome of the study. Therefore, the different attributes of the data must be ensured; validity, reliability, and relevance (Lundahl & Skärvad, 1999). The mentioned attributes will be discussed in the end of the chapter. There are different methods that can be utilized when gathering data. To reach a higher scientific quality and increase reliability I have combined four methods. The intention was also to receive a wider scope in the material, a more solid and secure ground for conclusions and a deeper understanding. Accordingly, I utilized a pre-study, literature study, interviews and questionnaires. This approach was also assist in satisfying the three tenets of the qualitative method: describing, understanding and explaining, all essential to the fulfillment of my purpose.

3.4 The literature study

A major part of this paper consists of results of a literature study; the categorization of information and clarification of complex concepts is a vital part of the purpose. The rationale of the study was to find and define the general themes that can be included in an IS/IT strategy and to present the general issues in global business strategy. The review and compilation of research in turn led to new questions, presented in the end of the theoretical framework. Comprehensive searches in books, on the Internet, and in articles from business magazines were conducted. Due to prior interest, the first searches were related to strategic planning and business based IS/IT strategies in general. Once the problem area was defined, a narrower search process could be performed. Jönköping University’s library services were utilized, likewise the library of Universidad de Belgrano (Belgrano University, Buenos Aires) and Universidad Tecnología Nacional (The National Technology University, Buenos Aires). Moreover online databases were accessed through the library resources of DePaul University of Chicago. Several online databases, such as ABI/Inform Global, Affärsdata, Jstor, Wiley Interscience, and Business Search Elite together with the bibliographical list of libraries connected to LIBRIS, were used. Different keywords were used; examples are Strategic planning, business process, system theory, soft systems, responsibilities, information technology strategy, information management, information systems, system interaction, system dependencies, knowledge management, inter-organizational, collaboration techniques, computerized interaction. These keywords
among others were employed in different combinations and modifications. The reference lists of articles and books were then used to a large extent to find new relevant sources.

3.5 The empirical data

The empirical findings are based on primary data from a pre-study, nine interviews in three companies and seven questionnaires with people who have broad knowledge in the IT and/or business field. Choosing a qualitative method there are really just two ways of gathering data; interviews or direct observations. The closeness to the interviewed objects, i.e. the face-to-face contact is a prerequisite for qualitative interviews. Observation requires, according to Holme and Solvang (1997) to closely study a number of companies under a long period of time, with regularity. Given the limited time of total seven months for this project, personal interviews was the only feasible option.

The primary data was collected using an informal and semi structured method for the pre-study and a structured and standardized method for the interviews. The standardization of interviews means that the same questions are asked to all of the respondents. The level of structure determines the formality of the interview. An un-structured interview for instance is when none of the questions are planned, but they evolve during the conversation.

3.5.1 The pre-study

I desired a separate source for the pre-study in order to receive information from an objective standpoint. Trost (1994) differentiates between informant and respondent types of interviews. The informant type excludes interviews with persons involved in the studied phenomenon itself. In order to discuss global IS/IT management questions I desired to talk to a specialist. By contacting the embassy in Argentina, I came in contact with the manager for IFS Argentina, Chile and Uruguay (Mr. C), who is very knowledgeable and experienced in the area. Moreover, developers of business systems inarguably possess extensive knowledge about IS/IT strategies.

The pre-study is normally a non- or semi structured informational interview in order to gain or validate information over a specific subject. An introduction letter that explained the background to the initiative and some ideas were sent out by forehand (appendix C) but otherwise the respondent was given a lot of independence to formulate his answers. The letter was of great help to me and to the interviewee, providing a more concrete framework to the interview with a “fuzzy” subject. The advantages with less structured interviews are that the answers can be more thorough and diversified (Svenning 1996). Moreover, increased understanding can be reached through discussion with the interviewee as the interviewer is able to explicate and shed light on an unclear answer.

The objective of the pre-study was to answer if a generic IS/IT strategy can be formulated, and if so, whether some parts are more important than others. I also wanted the respondents’ opinion on how the globalization affects the generic IT/IT strategy. Furthermore I aimed to learn if it is possible and/or beneficial to maintain a “good” IS/IT strategy in a mother child coalition.

3.5.1.1 Stories as data

The material from the pre-study can be defined as a story. Because of its subjectiveness, stories that are utilized to gather data require some extra attention. Information can be created in a conversation, where both parts can test their understanding, and where the sense-making process is used as the ability to understand the environment and the author’s role in the entire picture. In this perspective it becomes vital to listen to peoples’ stories, to understand the phenomena that appear in the research context in question (Douglas, 1985). The story should re-
flect the teller’s understanding in a wider perspective but also in a more concretized perspective, where it can be related to people and actions according to Glaser & Strauss (1967). The narrative style is a way of organizing contexts and gain insights and meaning. One could also say it is a way to construct the reality. To tell a story is also to give causes and effects, separate the essential from the unessential, chose the start and the end. The storyteller chooses the starting point, the aspects and decides the contexts. The telling draws experiences together, which in turn leads to new understanding and opens up for new actions. To come closer to the real experience, the firsthand story, narrative analysis is utilized as a methodological approach for the pre-study (Riessman, 1993). It involves analyzing the story itself, rather than the content that is the effect of the language. "The purpose is to see how respondents in interviews impose order on the flow of experience to make sense of events and actions in their lives" (Riessman, 1993, p. 2). This is where one is trying to understand how the story is compounded, which cultural standpoints that are the basis for the story and in what way the storyteller tries to make himself trustworthy. The researcher is not able to do more than listen, record and interpret what somebody tells. "Investigators do not have direct access to another's experience. We deal with ambiguous representations of it - talk, text, interaction and interpretation" (Riessman, 1993, p. 8). In this sense I have chosen to make an exception, since language and cultural differences were strong influencing factors. How the interpretation is performed is highly dependent on the purpose of the study. Riessman (1993) also writes that all theory is changing constantly; hence there is no master narrative. This approach to stories and the acceptance of the ambiguity of the language can be viewed as a clarification of empirically based theory.

3.5.2 The interviews

The data collection was continued with semi-structured interviews - conducted with more formality than the pre-study. Close-ended measurable questions were combined with open-ended in a question guide. Although the open-ended answers are more complex to analyze they can in reward give more profound information. Closed answers are typically preferred when many different factors are analyzed, to not tire the responders and to increase the analyzability (Lundahl & Skärvad, 1999). The close-ended questions were re-utilized in the questionnaires, which design will be described in the next section. The result from the close ended questions was compiled in an excel file and the information from the open-ended questions were analyzed in the light of the objective information on each firm, such as size, industry, sales and organizational structure.

The purpose of the interviews was, as mentioned, to find out how IS/IT strategy is interpreted in Swedish-Argentinean coalitions. The question guide that directed the interviews can be found in appendix A. The general themes covered strategic planning and alignment between business strategy and IS strategy, competitive advantage, knowledge management, responsibilities, system architecture, interaction, and security. One objective of the interview was to find why an IS/IT strategy is important to the respondents. They were moreover asked a number of questions regarding IS/IT strategies in order for me to find out if their interpretation of a IS/IT strategy was in accordance with theory within the research area and if the views were consistent throughout the concern.

3.5.2.1 Sampling

Six interviews were conducted with three Swedish-Argentinean coalitions. One selection criterion was that they should define themselves as “global”. Moreover, their devotion of time and interest was guiding me in my choice. Furthermore, the three companies are all categorized as large, industrial companies according to the database Affärsdata (2004-04-11). To respect the companies and their management in the somewhat sensitive subject of company strategies and personal perceptions, I have left out names of the interviewees. The interview sample in each
firm constituted of the top manager and an IT manager or a representative from the IT department. In all three Argentinean firms, the top executive manager was available for interview, while the IT managers were more squeezed with time and had to be replace with representatives from IT department in two cases. I sampled both groups of managers, receiving a diverse view regarding their subjective interpretations of IS/IT strategy, given that business managers and IT departments not necessarily are in agreement. Previous studies on this theme have used single respondents, usually a IS manger.

I also conducted three brief interviews with IT manager or a top strategy position in the mother company on the Swedish side. The intent with these interviews was to get an idea of the company’s business strategy, their IS/IT strategy objective and to receive objective information about the organizational structure of the firm. The length of the interview was based on each person’s willingness to devote his/her time. The sample fulfilled the requirements I had stated, and I was satisfied the reliability. The absence of imperfections according to chance can - independently of the number of firms in a qualitative study like this- be high, thus I was convince my sample was good. The option was a survey with a total sample, and this would have been unfeasible within the frame of a master’s thesis given the depth of each interview.

In addition to the interviews, a questionnaire was sent by email to ten randomly selected Swedish—Argentinean coalitions, all with similar criteria according to Affärsdatabasen as the three interviewed firms. The difference with this sample was that no attention was given to whether they defined themselves as “global” or if they had another organizational structure. Anonymity was guaranteed and the reply frequency was high, 70%, or 7 of 10 firms completed the questionnaire. The reply was facilitated by formularizing the questionnaire electronically.

3.5.2.2 Design of the questionnaire

The design of the questionnaire was inspired by one in the study of Croteau and Bergeron (2001). It was originally a simple interview guide for the semi structured interviews, but it was later revised (deleting open questions) to gather data via email. A standardized research design was used, in the sense that the same questions were asked to different functions; management and the IT specialists in both countries in order to understand the areas of discrepancy, if and what questions have different weight depending on who is asked etc.

All questions were formalized and well defined, and included instructions on how the answers should be written. Only a small divergence from the questionnaire was acceptable. This method is chosen because of its exactness and the ability to make generalizations.

Trost (1994) warns against using too many open questions (as in non structured interviews) since it is time consuming to analyze these answers for large samples and because they deal with an interviewee’s approach and behavior. According to Trost (1994) it is important to organize a common method of measurement, preferable a scale to be able to compare and weigh the effects with business goals. Most of the questions were to be rated on a five-graded scale, with the possibility for commentaries on each question. I planned for and realized an iterative process for the questionnaire formulation, testing and revising it every time new knowledge was found.

3.6 Modes of analysis

9 The three firms that fell out of the sample replied to my email, saying that they either did not have an IS/IT strategy or that everything concerning IT was outsourced.
Trost (1994) argues that when it comes to the qualitative research, it is more correct to speak of *Modes of Analysis* instead of *Data Analysis*, because there is no clear distinction between the data gathering and the data analysis as in the case of the quantitative research. Here, the *hermeneutic* perspective says that the researcher’s presuppositions affect the gathering of the data, and therefore the analysis affect the data and the data affects the analysis in significant ways. According to Merriam (1994), the other extreme is the *positivistic* perspective. Eriksson and Wiedersheim-Paul (1997) have emphasized the differences between the two research traditions. “While the positivism describes and explains, the hermeneutic research searches for a general understanding, an insight.” The *Hermeneutic* method is concerned with the understanding of someone’s actions, not so much to diagnose the causes of a phenomenon, but to interpret its meaning. According to the *positivistic approach* on the other hand, data is collected in order to be dealt with statistically, by descriptive and comparable examinations and experiments.

Because of the narrow and unique sample, it was essential to find a way to analyze the gathered information to come up with general findings and patterns. The analysis in this paper was conducted using the secondary data and the empirical findings. It discharges in a response to the research questions and discussion of the results. With my method I was able to find information by using my own knowledge as well as the knowledge gained from the persons interviewed. This implies a two level analysis with the responsibility of finding relationships between the interviews resting upon myself.

### 3.7 Quality of the study

A general assumption in scientific works is that the researcher shall be objective rather than subjective. The objectiveness is a measure of the quality of the study, commonly illustrated with the concept *reliability, validity* and *trustworthiness* (Merriam, 1994). These concepts were first utilized in the positivism and logical empirism, and were a reaction to philosophy and science that lacked empirical base, or what could not be proved with the five senses. A consequence was that thoughts and feelings were not regarded as sources of knowledge. It was solely assertions that could be measured or verified that could be the bases of theory.

The validity concerns how well theories are corresponding to what can be observed and reliability if the author has conducted his work in a proper way, and if other researchers can reach the same result if they would replicate the study. The attention of the latter is usually centered on the data collection. The reliability test of a qualitative study is a sort of answer to the classical interpretation of the concept, although this possibility almost disappears in the explorative study, where the environment constantly changes. In a post-modern perspective, the interview is regarded as a story arising from a negotiation situation; the first aiming at creating meaning and new coherences about the discussed area. (Riessman, 1993; Waldenström, 1995). Although, according to Yin (1984) reliability should not be disqualified in case studies. Instead, it may be reinforced through the author’s accurate reports of the proceedings. These measures should, according to Yin (1984), make it possible for other researchers to follow the author’s interpretation of the data material.

In order to fulfill the criteria of validity reliability and trustworthiness, I have used a systematic approach to document the method and utilized three different types of data: literature studies, pre- studies and interviews with persons having widespread knowledge within the relevant area. This can also be seen as a chain of evidence; the data I found in the studies were supported or rejected by the former informants and then verified by the latter. According to Eriksson and Wiedersheim-Paul, 1997, one way of avoiding misinterpretations is to get back to the respondents and ask them if the writing is accurate. Accordingly, I sent copies to the respondents of the printed interviews with information of how to contact me if information were incorrect.
Svenning (1996) argues one of the greatest threats of the qualitative analysis is that too much trust is given the analysis of the interviewees. He characterizes this as the “king witness-syndrome”, referring to the risk of tingeing or confusing ones own analysis with the “real” true description of the interviewees. Another criticism of the qualitative method is the interviewer-effect, which stems from the risk of steering the interview in a non-predictable direction with comments, mimics or exclamations. It is difficult to create a method to eliminate these apprehensions completely; however by being aware of them I have tried to minimize the risk of their occurrence. I believe that this type of risks is very small with the means of a free interview style. On the contrary, I was trying to encourage extravagances that could make me observant of areas of interest that I was not aware of. This type of information could be a positive contribution to the study and truly reinforce my hermeneutic approach.

3.7.1 Criticism of the sources

As can be viewed in the reference list, most references are scientific articles and not literature in the sense of books. This can be interpreted as a sign that theory is too universal and cannot be applied to this specific problem area. Immature research articles might increase the source of errors in the paper. I have tried to get a wide scope of both authors and countries, and to focus on my narrow research questions in order to do my best in reducing the possible source of errors to a minimum.

3.8 Limitations of method

In this type of studies it is easy to get too personal and only focus on individual opinions of the interviewees. This is important to consider when analyzing the gathered material. The reason why I decided to use interviews anyway is that using surveys or questionnaires solely often is too narrow to obtain a less rigid opinion from a person. The interviews lasted between one and three hours. The length of the interview varied depending on the interest of the respondent and to what degree he or she could answer the questions. I took notes during the interviews. Dexter found that in an interview situation there are three variables of importance. These are according to Merriam (1994):

- The interviewer’s personality and skills
- The respondents attitudes, skills and position
- How the parties define the situation

All these criteria are found to be critical in the interview setting of this paper. Being a Swedish student conducting interviews in Argentina on Swedish firms surely affected the interview. However, the Argentinean respondents were offered anonymity towards their Swedish counterparts. Moreover, the cultural and social differences between the countries are large. Argentina is a country in a deep economic crisis; currently 70 % is living below the poverty line, with a high level of corruption and legal instability. It is also important to note that globalization is an ugly world in the Argentinean dictionary, given their dramatic past with IMF, privatizations of state owned companies which has resulted in aversion to multi nationals and a high level of nationalism. For these reasons, the Argentinean respondents’ attitudes towards me were sometimes hard to handle. In general they were all interested in my work, and gave positive response on my choice of subject. All of the interviews were done at the respondent’s office or similar, which gave me an opportunity to see their natural environment and the physical organization. The questions were posed in English but the responses often followed in Spanish because the respondents felt more secure expressing themselves in their native language. The latter aspect has actually helped me minimize linguistical errors.
4 Summary of empirical studies

The empirical findings consists of a pre-study that is an investigation of the global IS/IT strategy management issues followed by findings from the interviews and questionnaires conducted with Argentinean and Swedish firms. An integrative analysis is given in chapter five.

4.1 The Pre-study

This part of the paper can be seen as a theoretical complementation, as the pre-study, apart from being a pre-study, fills a gap in the theoretical framework (concerning global IS/IT strategies). The themes discussed were the global issues within information-, system- and technology-strategy. The conversation with Mr. C (2004-04-24) is freely interpreted and no citations are made according to his wish. The objective of the pre-study was to find if a generic IS/IT strategy can be formulated, and if so, to determine the most important themes. I also wanted the respondents’ opinion on how the globalization affects the generic IT/IT strategy. Furthermore, I aimed to discuss what is a “good” strategy and if it is possible and/or beneficial to conduct a good global IS/IT strategy in a mother child coalition.

4.1.1 The IS/IT Strategy and its generalizability

The themes that I argued were generic in IS/IT strategy, each led to long discussions. Mr. Mr. C meant that each of the factors must be viewed in the light of the specific case and is not possible to generalize. To sum up, there Mr. C though no generic strategy could be defined, however, some are more interesting than others in a coalition perspective and brought up four important areas to discuss in the light of globalization.; information system management (IS), people management (or information management IM), information technology management (IT), and culture. The first three themes are directly comparable to the theoretical framework presented in chapter three, and the last one is examined with regards to IS/IT questions in this paper.

4.1.2 The “good” strategy

Even though a generic strategy seemed almost impossible to define, a good strategy always has some common themes. A good strategy should fit the vision and the mission of the company that is not forgotten and not stored away in a chest of drawers. It is a policy that is easy to understand and developed by a team of specialists in coordination with the IT manager, the chief information manager and senior management. A good strategy is developed in accordance with the corporate strategy, tentatively created and revised with important changes in the organization. The good strategy for a coalition is Flexible! It has to take culture into consideration and be adapted frequently, preferably every year, to stand up to the competitive nature of the environment.

4.1.3 Globalization and its effect on IS/IM/IT strategy

Globalization reveals an imposing future for the managers of many firms. In numerous industries, globalization has already produced dramatic changes in key markets, major competitors, and products. Mr. C (2004-04-24) argues that carefully crafted investments in global IS/IT activities offer firms an opportunity to enhance coordination while opening access to new global markets and businesses. This is true because information technology on a global scale compresses time and space and permits the duplication and sharing of scarce corporate expertise. Such capabilities provide firms with an opportunity to leverage advantages in both market size
and geographical scope while they simultaneously provide the means to respond rapidly to the unique requirements of national markets.

Managers should be cautious with the many possible areas of difficulties within global IS/IT activities, especially with countries such as Argentina. Language, culture, national infrastructure, availability of skilled IT staff, data export control, legislation and trade unions, communication costs and hardware and software incompatibility just to name some of the themes that may cause trouble and change.

4.1.3.1 IS themes

The alignment

The alignments of global information strategy and the new business visions are crucial to the success of global business operations. In fact, the imperative for the information system strategy function is to align itself with the business processes, strategies, and goals of the organization. The goals and strategic visions of business entities like suppliers, customers, government agencies, and even competitors must be incorporated in the development of information systems strategies. In addition, the alignment of information systems with business functions in a global organization must also take into account the organizational type or structure. Information systems organization alignment in the global organization is not just following business processes and conducting analysis and design, but it also requires understanding of abstract level of business strategic vision and cooperation with all business entities.

Competitive aspects

The borderless environment brings tremendous potential for exploring comparative advantage across information systems resources (people, businesses, systems, vendors, and customers, for example). The information systems resource is not tied as much as before to physical resources and a local presence. The main reason for this is the virtuality of the information systems function, enabled by the electronic communication combined with asynchronous exchange. This indeed will foster competitive advantage. Moreover, a skillful integration of systems will be beneficial, in a future where systems and applications are more and more complex.

4.1.3.2 IM themes

Knowledge sharing

Information is a direct product of processes that capture knowledge about the persons, places, things, and events discovered while conducting business transactions. In a global organization, the sources of information are enormous. Nevertheless, many companies do not grasp the concept of knowledge management. They have IT-based systems that are essentially databases, enabling sharing and usage of information on an organization-wide basis and they call them knowledge management systems. Leadership skills are crucial to overcome the barriers to information transfer in mother-child coalitions, he says. Directives are important as objectives may vary between the two entities. It must be considered with distinct management styles, implication of technology, and the business environment. Different levels and types of employees would play different roles in the organization’s global transition process. Considering the types of employees and their respective situations, suitable training programs can be developed to enhance the employee skills and serve the requirements of globalization.

Mr. C argues patents will be extremely important in the future, particularly for global firms. Proprietary technologies like intellectual capital or patents, brands or processes may be foundations for long-term strategic advantages as long as they remain protected. Other more technical assets (like hardware) offer far more value when shared than when used in isolation. A trap is
assuming that opportunities for advantage will be available indefinitely. In reality the window for gaining advantage from an infrastructural technology is open only briefly.

**Responsibilities**

In the process of globalization, business and information system strategies are often senior executives’ major concern. Business leaders, including chief information officers, have to be attentive, comfortable with taking risks and willing to create and maintain cultures that are aligned to the global environment. Until recently, cultural differences were seen as a hinder to management, the isolation of the diversity was the easiest short-term solution. In the collaboration of the 20th century, diversity skills are critical. For managers, therefore, another critical matter is a proactive work to nurture the diverse environment and prepare the information systems for effective cross-cultural communication. Mr. C says Firms decentralize to allow managers control specialized information of specific environment and to reduce the information load of centralized organizations. They might centralize again when the aim is to gain control over the coalition or improve co-ordination.

The IT function may need to change to not be completely outperformed by outsourcing alternatives- from a decentralised decision-making model, for example, to one that is more centralised. Such developments may cause friction between the function and the line managers with which it has to work, and this is where the function's cultural "software" is important. The problem is that even the IT –department is a soft system and all too many IT professionals have not been educated to handle the political aspects of the organisations in which they earn their living; yet quality of relationships is perhaps as important as quality of product in this field.

4.1.3.3 **IT themes**

Mr. C warns that the builder of a global strategy must step carefully when designing the infrastructure or seeking out international standards for IT. Some countries in Latin America, for example Brazil, and Argentina have used information He suggests that senior management "finds friends in the PTTs"-the state-owned post office and telecommunications operators that closely regulate the telecommunications industry. Such contacts show a corporate concern for the issues and a willingness to comply with both the letter and the spirit of the law. Moreover, worldwide variations in hardware and software features, i.e., availability and quality, force firms to use different vendor products in different parts of the world. This causes major obstacles in integrating communication networks, hardware, and disparate systems software for global applications. Vendors' protectionist policies for their products are cited as the major barrier for agreements on standards such Open Systems Interconnection (OSI). The fastest way that standards emerge is through the power of key market players. Although vendors are usually considered as key market players, there have been other suggestions that appropriate IT standards will only develop if the user organizations coordinate their demands and play an active role in "international pressure groups.

The international flow of data has received attention from various legislative bodies. Much of this has been focused on the issues of data privacy and transborder data flows (TDF). The TDF laws originated from concerns about the integrity and confidentiality of personal data. Since then, several countries have extended privacy laws to protect "legal persons" such as associations and corporations.

**Globally standardized infrastructure**

Mr. C suggests that changes in corporate strategy and structure may be precipitating more centralized global IT activities: one common telecommunications network, shared databases, and standardized reporting and planning systems. He argues that it is absurd that so many interna-
tional firms have global business strategies but no corresponding strategy for managing information technology internationally. The shared understanding of the firm’s overall global strategy can never be overstated. IT can propagate new business strategies, but a more common manner is to connect IT to an existing global business strategy. Global companies must look for simple technologies in aiding their knowledge sharing and transferring process in order to improve their workers knowledge base and their intellectual capital. Creating relatively simple and clear systems for monitoring and evaluation the individual sub units’ performance is important. But in company after company the focus of management attention has moved to the integration and cohesion of subsystems. Having achieved the benefits that could be extracted from focusing on the competitiveness of each unit, the new round of performance improvement must come from better integration across those units. This sequential process of performance improvement constitutes of first building the strengths of the units and then building integration mechanisms across them. Oracle is a good example of a company that has internationalised a phenomenal paces, with little time to develop its organisational systems and processes. As a result, each of its overseas units developed its own unique system. Over the last two years the company has been working hard to standardize and integrate all these diverse systems. The need for integration is nothing new, but while the problem is old and well known, the circumstances has changed. The most important change of the circumstances is the IT capabilities that surround the enormous network that we call the web. The crux has always been the sharing of information and the new technologies that enable organizational responses to the integration needs in ways that were not possible five years ago, says Mr. C.

The components and modules of global information systems should also be designed flexible enough to transfer and adapt from one business unit to another without further technical modifications. This portable and transferable concept should be built into the development architecture to enhance the reusability and to reduce the development costs.

**Risks and security**

Mr. C argues information systems should be reliable in terms of withstanding the use by various types of users through a variety of platforms or environments. This refers to the capability of incorporating diverse error handling strategy to react any possible and unforeseeable situations in information systems. These are important concerns of the IS/IT strategy. Moreover, the availability and transferability of information systems are considered as important as the systems reliability in the global organization.

Due to the multinational business units in the global organization, each business unit may need to access the information in different periods. The maintenance strategy needs to cope with this multinational characteristic to eliminate the consequences of the systems downtime. End users and customers might be expecting the systems to operate in a 24/7 manner. The components and modules of global information systems should also be designed flexible enough to transfer and adapt from one business unit to another without further technical modifications, suggests Mr. C. This portable and transferable concept should be built into the development architecture to enhance the reusability and to reduce the development and maintenance costs.

**Planning change and evaluation**

Before formulating or implementing a new global strategy or changing a current, the organization needs to develop information systems plan to precisely state the specifications and requirements of each phase and ensure the plan matches the organization’s strategic vision. Mr. C refers to the plan as a roadmap indicating the direction of systems development: the rationale, the current situation, the management strategy, the realization plan, and the budget. To develop an effective global information systems plan, the organization should first, understand the cur-
rent business status in terms of the strengths and weaknesses, recognize all issues faced in the global transition process, and clearly outline short-term and long-term business strategies.

Changes in business processes are tightly coupled with the design of global information system strategies. This involves rethinking and redesigning the business processes to align with the global business strategic vision. In global business environment, business processes are accomplished through collaborative teams across boarders. They often find that some similar or even identical processes are implemented in the various units resulting in duplication data. It involves ambiguous global management skills to appropriately allocate human resources so that duplication of jobs is eliminated. Although difficult, companies should strive to define unique global processes that are adopted throughout the organization.

4.1.4 Cultural issues and business opportunities

Mr. C argued culture is one of the more interesting aspects to discuss, as it affects the success or failure of global transformation. Global organizations need to realize the cultural impact on the information flow and ensure that information travels from one part of the organization to another within expected time, sequence, and format. Additionally, many recent research publications have reported that the knowledge of culture and cultural environments is crucial for the success of the globalization process. Cultural diversity is not avoidable, instead it should be encouraged to embrace diversity and turn the multicultural characteristics into strategic advantages. Understanding it is crucial. Aspects as language, environment, time perception, and the idea of power and authority are all vital aspects to consider and take advantage of.

Cultures can be future oriented or past oriented, which affects view on business opportunities and current business operations. Many Latin cultures for example are heavily influenced by the past. Power equity is a diverse concept as units of a parent child organization may have divergent perception of power authority and equality to employees. The Latin cultures are even more hierarchical and formal than Swedish ones, however managers have lower education. Organizations must carefully adjust authority while maintaining the equivalent level of distribution among business units. There are several aspects pertaining to culture that need to be heeded by an organization planning to globalize its information systems management. These include education levels, geographical and time zones, religion aspect, demographic perspective, individual significance and objectives, communication, and leadership style. End users are less educated in Argentina and IT development and infrastructural issues are far away from European standards. Geographical by dispersion of business units with respective time zone ranges are natural characteristics of organizations that operate their business globally. These can be both helpful and detrimental. The advantage is the round-the-clock information systems development scenario, on the other hand disadvantages of real-time internet and live conferences could be damaging. Religion is not a critical issue between these types of countries but national holidays is affecting working hours and meetings.

There is no perfect and standard solution to overcome cultural differences according to Mr. C, but organizations should comprehend the meanings in order to pursue opportunities and foresee threats.
4.2 Summary from Interviews

4.2.1 Organisational structure and size

All the companies in my sample were large conglomerates, the majority within manufacturing. The range of the interviewed firms where internationals and globals. None of the firms, despite their large experience of being on the international market had reached a transnational status, as defined by Bartlett (2004).

4.2.2 Why an IT strategy, and drivers to globalization

The interviews offered a range of business drivers for their global applications. Some of these drivers were strongly linked to the needs of the marketplace, whereas others were driven by regulatory requirements. Many business managers mentioned the search for system economies as a driver for global applications. The search for systems economies was the initial driving force for global IT applications in 75% of the cases. The barriers were foremost the cost of globalization, which is the cost of integrating applications. The political cost is also high, because regulatory restrictions make it difficult to standardize infrastructure. Those who favoured synergies, argued security problems and licenses made it more difficult. Instead it is common that each subsidiary have their own ERP system. 50% of the interviewed companies were preoccupied by standardizing infrastructure. Practical problems include difficulties in the customs with hardware. This is the result of one of Kirshners (the Argentinean president) recent attempts to decrease corruption in Argentina. Often equipment is stopped and the exporter has to pay immense taxes in the customs for applications and hardware.

Although the managers were typically able to readily identify the business drivers, particularly the industry-based drivers, few were able to state the firm’s overall approach or strategy for managing global information technology. This was in striking contrast to the Swedish business/strategy management. Some other triggers mentioned were; improved control and better overall view of the total quantity of systems, stability, independence, flexibility (reduction of the complexity and inflexibility of tightly bound integrated systems), overall coordination of IS/IT activities globally, to establish a secure link for real time communication within the subsidiaries, scale of economics through software and knowledge sharing etc.

4.2.3 The parts of the IS/IT Strategy

4.2.3.1 IS Strategy

*The alignment* Based on their hard won experience, however, the interviewees were nearly unanimous in endorsing the need for a compelling business reason to coordinate and standardize information technology. Many interviewees agreed that they had initially made mistakes by assuming application requirements were similar, when the underlying business processes were later revealed to be different in sometimes subtle but significant ways.

The IT managers said it was very vital that proposed IT projects are aligned with future business structure, but not equally important that IS/IT strategy support the execution of the business strategy for the IT manager. However the latter was extremely important for the business manager. The same also argued IT should be traceable in the bottom line, whereas the IT managers were more interested in the long term firm performance. For 30% of the respondents it

---

10 One interviewee recalled being told by the CEO, "We have invested so damn much money in these home office systems- let's get some additional use out of them."
was equal, the manager stressed both aspects of cost savings and results on the bottom line, whereas the IT manager saw the long term gains.

**Strategic or Outsourced?** The IT manager in all firms argued IS/IT to be strategic, whereas the managers of business strategy had a mixed view.

**Competitive advantage** Everyone in my sample considered competitive advantages to be one of the most important themes of the IS/IT-strategy, but few managers were able to concretely define how IS/IT could be that driver.

### 4.2.3.2 IM strategy

**Knowledge sharing** The entire sample generally had a lot of trust in knowledge sharing and thought it should be employed in global coalitions. It was however regarded more important for managers and business/strategy management. Primarily because they saw cost savings in knowledge sharing. Within one company, the sales manager had all the client information indexed in filing cabinets so unless you knew the client by number and date you couldn't find the information. Without his notebook, the knowledge was locked away. The manager for this company was also worried about the knowledge drain that a skilled professional worker may cause. The other managers in Argentina saw the knowledge worker as an asset. But KMS (knowledge management systems) are not so popular. The managers believed that only a fraction of expensive knowledge management systems is used, doesn’t feel that KMS (knowledge management systems) deliver on their promise. Another firm argued the problem with their KMS was that it was hardly integrated with other systems as well as users. The other three firms said organizational return on investment is so hard to show therefore they did not want to invest.

**Responsibility** Both managers and IT people generally took on more responsibility when asked about their roles. The IT managers thought that almost all areas were included in their area of responsibility; strategic planning, to make sure proposed projects are aligned with future structure, authorize development projects, specify demands and ask for an IT-solution, procure effective IT solutions, strategy maintenance, IT-visioning and IT procurement, evaluate proposals and relate to value of possible improvements, implement the IS/IT strategy, evaluate the performance of roles are all IT managements responsibility. Moreover, they thought that defining business processes should be shared responsibility between IT managers and business managers. The realization and evaluation of the strategy should also be a common effort, between managers and teams of specialists.

The business/strategy management however, thought that it was the task of the IT manager to work out solutions and specify necessary investments costs. They also thought that IT managers not should deal with developing the business processes. IT managers should solely create processes that can support the enterprise. A few of the business managers thought that everything related to IT should be outsourced.

### 4.2.3.3 IT Strategy

**Interdependence or integration** All the IT-managers thought that the most important for coalitions is integration between systems and applications. The interaction between systems is mainly computerized\(^\text{11}\). The business managers thought that it was a balance between security

---

\(^{11}\) Example of communication techniques and hardware utilized for networking; voice channels over the links, Microsoft Exchange mail / Owa, Internet, DNS / WINS, PDC/BDC Sadeskanska Domain, SNA Service, Anti Virus software, SQL 6.5 and 2000, JDE Image: Watermark, Exchange connector, Microsoft IIS, SMTP server, ISA server (Proxy). Examples of software are ERP: J.D. Edwards World Software 7.3,
and economy. Naturally it would be great if everything was independently handled, but integration drives costs, and costs are disliked, especially from IT. When activities are outsourced it always has to do with savings that the general management like to make.

For one of the managers the interdependence between systems and subunits is very important (decentralized). This company is dependent on electrical standards, so he argued each country should have their own infrastructure. This means everything concerning infrastructure is locally procured and handled.

**Investments** The costs are primarily centralized for IT (labour costs; contracts and applications costs). Where licences are a big part of the budget, they are purchased at each subsidiary. The managers argued that IT spending and performance has a weak correlation, whereas the IT manager argue it does have correlation, how strong the correlation was differed between the interviewed.

**Infrastructure** 50% of the respondents had made grand efforts to standardize infrastructure the last couple of years\(^\text{12}\). They had the administration and security of the network centralized in Buenos Aires. Technical personnel were outsourced, and each country has to sign contracts with local providers for maintenance and technical assistance. The other 50% liked to see an independent configuration of infrastructure.

**Risks and security** The IT managers and the business managers were largely in agreement; but each firm had different priorities on secrecy, integrity, availability and traceability.

**Planning, evaluation and quality measurement** Formal IS/IT planning activities is important for systems effectiveness says managers. Likewise is formal quality benchmarketing of productivity measurement. The result was equal for all companies interviewed and no difference between roles could be observed either. The majority of the interviewees in my sample argued that global IS/IT strategies must be evaluated and revised more often than national. 30% of them utilized bench marketing with quality measurement.

---

**CRM:** Sales Logix (all countries), Asset Perfomance Management: Datastream MPX, Thin client: Citrix, Project Management: Primavera P3, Payroll: Meta4, Process Simulation: Hyprotech Hysys, CAD Tools: Autocad 2002

\(^{12}\) Most common is to configurate the WAN in a “star” architecture from where all the sites (in Latin America) take all the services, linked by terrestrial, satellital and VPN over Internet links.
5 Analysis

The analysis ties the pieces of theory and empiric material together. The interpretations of interviews with managers are put into context with the framework of IS/IT strategies previously created. The analysis is made with the hermeneutic approach to analyzing, described in chapter two.

To begin, I meant to use the secondary data from my studies of others research, and complement it with new knowledge from the pre-study. The literature study (research questions 1-2) helped me find and define the general themes that can be included in an IS/IT strategy and to present the general themes of global business strategy. The questions formulated in the end of the framework of references are also discussed in this analysis. The pre-study (research questions 3-5) assisted me in answering if a generic IS/IT strategy can be formulated, and if so, if some parts are the more important than others. Besides, I wanted the respondents’ opinion on how the globalization affects the generic IT/IT strategy. In addition I expected to learn if it is possible and/or beneficial to maintain a “good” IS/IT strategy in a mother child coalition. Furthermore, I aimed to compare the information from part 1 to my empirical material; the interpretations of IS/IT strategy from the Argentinean managers (research questions 6-8) and in the next section, also to the comments from Swedish business/strategy management (d). The objective of the interviews was to find why an IS/IT strategy is important to them. They were moreover asked a number of questions regarding IS/IT strategies to find if their interpretation of a IS/IT strategy was in accordance with theory within the research area and if their views were consistent throughout the concern.

5.1 A comparison of literature, pre-study and empiric material

5.1.1 What shall the IT strategy look like? (Q1, Q3, Q5)

Question 1. Find and define the themes that can be included in an IS/IT strategy.

Falk and Olve (1996) have tried to determine the themes that should be included in the IS strategy. Since they concentrate on the information-strategy part they stress different the “what” factors; they argue the most important requisite is that the strategy should be in accordance with the mission statement, the business goals and the business strategy. Other important components are according to Falk and Olve (1996): competence development, roles and responsibilities, principles of system and application, outsourcing, information management, architecture, security (including ethics and moral).
In accordance to theory Sabherwal and Chan (2001); Earl (1996), we can define an IS/IT strategy as a structured framework designed to bring together needs for information systems and enabling technologies. Information systems (IS) involve the alignment, and strategic benefits, whereas the information technology (IT) deals with the hard themes, the technology deployment and policies, architecture, standards, security levels, and risk attitudes. Finally, information management (IM) includes relationships, roles, and responsibilities. Furthermore, the business strategy and information strategy need to be integrated with IT and IS.

The thorough literature research and the pre-study left me with the composition of an adapted framework. The empirical study made did not change this framework or its content by large means. Instead it was generally accepted and understood by the people in my sample. Only logistical differences in definitions were observed.

**Question 3.** Can a generic global IS/IT strategy be formulated? If so, what parts are vital?

This question is different from the former in the sense that it was asked to the respondent in the pre-study. Mr. C validated my apprehensions that IS/IT-strategy on a global level is a vague concept, at its best a brilliantly formulated document, but rarely understood and even lesser employed consequently in grand international organizations. A generic strategy document is worth nothing, because if it is generic the competitive component is gone, the prerequisite in order to gain any advantage with the IT strategy. Mr. C (2004-04-24) argued that each of the factors must be viewed in the light of the specific case and is not possible to generalize. Depending on firms organizational approach it may be beneficial with a single, centralized strategy.

**Question 5.** What is a “good” strategy and is it possible and/or beneficial to conduct a good global IS/IT strategy in a mother child coalition?

With regards to the formulation of a strategy it can be read in theory (Ward & Griffiths, 1996; Earl, 1989; Feeny & Willcocks, 1998; Henderson & Venkatraman, 1999 etc.) that it should be handled by a team of specialists in coherence with management and comprehended throughout the organisation. Ideally, the physical document serves as a strategic tool, reminding and motivating the creators. Everyone in the firms understands their responsibility and authority with regards to the strategy. IT is employed locally but with global advantages and the strategy aligns the business units and the departments, the system with the processes and the infrastructure with information. IT is supporting vital processes and enables the firm to maintain competitive advantage. Value should be driven from every part of any investment and security is top priority and understood throughout the organization. Workers in this firm are sharing knowledge and information through efficient mediums and the infrastructure is standardized to achieve economies of scale. Applications are compatible and well integrated and ERP systems are utilized to their full capacity. But is it a realistic setting?

IT strategies have traditionally been based on senior management's future vision of the enterprise. The frequent absence of a long-term business plan calls for a fresh approach to creating an IT strategy. A winning IS/IT strategy must be based on the enterprise's business strategy to ensure the business value of IT. A good strategy according to Mr. C should fit the vision and the mission of the company that is not forgotten and not stored away in a chest of drawers. It is a policy that is easy to understand and developed by a team of specialists in coordination with the IT manager, the chief information manager and senior management. A good global strategy is developed in accordance with the goals for the whole enterprise in mind, tentatively created and revised with important changes in the organization. The good strategy for one company may be a catastrophe for another. A good global strategy is one that is flexible, forward looking, and frequently evaluated.
5.1.2 Why a strategy? (Q6)

**Question 6.** Why an IS/IT strategy?

The respondents did not exactly agree with the theoretical definition (without knowing it). The intent of a strategy is according to Hamel & Prahalad, (1990) is to provide competitive advantages through long-term planning. The managers in my sample had a more practical approach as to why formulating an IS/IT strategy. Although the managers were typically able to readily identify the business drivers, particularly the industry-based drivers, few were able to state the firm's overall approach or strategy for managing global information technology. Some of these drivers were strongly linked to the needs of the marketplace, whereas others were driven by regulatory requirements. This was in striking contrast to the Swedish business/strategy management managers mentioned the search for system economies as a driver for global applications. The search for systems economies was also said to be the initial driving force for global IT applications in all firms. On the Argentinean side, other triggers mentioned were; improved control and better overall view of the total quantity of systems, stability, independence, flexibility (reduction of the complexity and inflexibility of tightly bound integrated systems), overall coordination of IS/IT activities globally, to establish a secure link for real time communication within the subsidiaries, scale of economics through software and knowledge sharing etc.

The divergence between respondents answers may depend on their perspective towards the IS paradigm, but can also be dependent on time perspective. Managers and IT people were not in agreement. Generally, the Argentinean IT people desired short term gains, while Business/strategy management in Sweden focused on cost savings. This is contradictory to Earl’s study of 1989. The discrepancy may depend on the cultural differences between Sweden and Argentina.

5.1.3 The content of a strategy and the effects of globalization (Q4, Q7, Q8)

**Question 4.** How does the globalization affect the generic IT/IT strategy?

**Question 7.** Is the interpretation of an IS/IT strategy in accordance with theory within the research area?

**Question 8.** Are interpretations of the concept IS/IT strategy consistent throughout the concern?

These questions are answered with the discussion below, where theory and pre-study is compared and empirical results are critically analyzed. Figure 6 below summarizes how the three questions and empirical sources are connected.

---

13 Earl (1998) made a study of managers short and long term goals and compared it to the time perspective of IT managers.
5.1.3.1 IS themes

Even though no sustainable advantage can be proved, by accepting IT’s role as an enabler of competitive advantage one can move forward and define how to combine business architecture with IT architecture. The general approach has been to cast the task as a technology diffusion problem and to find ways to reconfigure the technology and “align” it with business goals and business processes. Henderson and Venkatraman (1999) argue that the IT function traditionally has been viewed as a support function, not essential to the business management of the firm. Mr. C (2004-04-24) argues that information systems alignment in the global organization is not just following business processes and conducting analysis and design, but it also requires a deeper understanding of abstract level of business strategic vision and cooperation with all business entities. Based on the managers in my sample’s hard won experience, they were nearly unanimous in endorsing the need for a compelling business reason to coordinate and standardize information technology. 60% of the respondents agreed that they had initially made mistakes by assuming requirements were similar, when the underlying business processes were later revealed to be different in sometimes subtle but significant ways. The IT managers said it was very vital that proposed IT projects are aligned with future business structure, but not equally important that IS/IT strategy support the execution of the business strategy for the IT manager. However the latter was extremely important for the business managers. The same also argued IT should be traceable in the bottom line, whereas the IT managers were more interested in the long term firm performance. For 30% of the respondents it was equal, the manager stressed both aspects of cost savings and results on the bottom line, whereas the IT manager saw the long terms gains.

Is it strategic, and the competitive advantage  The IT manager in all firms argued IS/IT to be strategic, whereas the managers of business strategy had a mixed view. Davenport (1993) says that information in a business is always strategic. The technology component of IT is only strategic in the sense that it helps an organization define and achieve strategic goals; otherwise it is simply a tool/commodity like the telephone means Carr (2004). Henderson and Venkatraman (1999) have found that IT management skills are the most likely source of sustained IT-based advantage. Moreover, they argue that companies inability to realize value from IT stems from lack of alignment between business and IS/IT strategy. Dehning and Stathopoulos (2002) are examining the factors that are believed to lead to a sustainable competitive advantage due to an IT enabled strategy, and found that managerial IT skills are positively related

---

14 One interviewee recalled being told by the CEO, "We have invested so damn much money in these home office systems- let's get some additional use out of them."
to sustainability and competitor’s knowledge of competitive advantage is negatively related to sustainability. Dehning and Statopoulos also mention the increasing integration as another managerial opportunity. Mr. C also stresses the integration as an opportunity to leverage competitive advantages. Everyone in my sample considered competitive advantages to be one of the most important themes of the IS/IT-strategy, but few managers were able to concretely define how IS/IT could be that driver.

**Conclusions from analysis** Sustainable strategic advantage is a management concept, seldom proved in reality. A strategy statement must benefit the enterprise — and the IS organization in particular — to be considered "strategic." Several theorists have found management skills are the only serious contributor to sustainable advantage. Another factor that is under explored and might be of interest in the future is the integration between systems and applications. The concept comparative advantage might be a useful notion to include in the strategy. It recognizes that between two entities there are differences in competitive traits. The basis for creating synergy across entities is what each entity does best and how this can be shared with the other for mutual benefit. I assume this is true for concerns with their entities in different geographical positions too.

CIOs need to become comfortable with the notion of exploiting this driver in the form of a comparative advantage. As a concrete example, differences in time zones around the globe are now seen as a blessing rather than a problem. Until now, we used to deal with time zone differences. Today, we talk of leveraging the time zone difference, just like the international financial marketplace is doing. Moreover, the gains of diversity may come from other, unexpected areas. A specific example of this point is the creativity and innovation that diversity can bring because of differences in the way each entity thinks, solves problems, and acts.

Mr. C offers a valuable point of view, that the strategy must be aligned in all business entities. Nevertheless, this view was not supported by all Argentinean managers. They believed more in standardization than the Swedish business/strategy management. With regards to the link to value, the IT managers were more reluctant to full transparency and clear links to value than business managers. Here too, it seems like the difference lies in the time perspective. Instead, IT people valued the long-term benefits to competitive advantage. In that sense the perspective of IT managers can be said to be in accordance with Earls’ (1989) study.

**5.1.3.2 IM themes**

Knowledge management is the process of systematically and actively managing and leveraging the stores of knowledge in the organization according to Davenport (1993). Firms may undervalue the creation and capture of knowledge, they may lose or give away what they possess, they may inhibit or deter the sharing of knowledge, and they may underinvest in both using and reusing the knowledge they have. Mr. C agrees and adds; they [companies] have IT based systems that are essentially databases, enabling sharing and usage of information on an organization wide basis and they call them knowledge management systems (2004-04-24). Leadership skills will be crucial, in order to set directives for discrepancies in objectives between entities. Moreover, considering the types of employees and their respective situations, suitable training programs can be developed to enhance the employee skills and serve the requirements of globalization. The entire sample generally had a lot of trust in knowledge sharing and thought it should be employed in global coalitions. It was however regarded more important for managers and business/strategy management. Primarily because they saw cost savings in knowledge sharing. Within one company, the sales manager had all the client information indexed in filing cabinets so unless you knew the client by number and date you couldn’t find the information. Without his notebook, the knowledge was locked away. The manager for this company was also worried about the knowledge drain that a skilled professional worker may cause. The other managers in Argentina saw the knowledge worker as an asset. But KMS (knowledge manage-
ment systems) are not so popular. The managers believed that only a fraction of expensive knowledge management systems is used, doesn’t feel that KMS (knowledge management systems) deliver on their promise. Another firm argued the problem with their KMS was that it was hardly integrated with other systems as well as users. The other three firms said organizational return on investment is so hard to show therefore they did not want to invest.

Understanding the role of knowledge in organizations may help answer the question of why some firms are constantly successful argue Davenport & Prusak, 1998). Earl (1999c) has noticed that knowledge management tends to be either a human resource question or an IT matter, and both extremes are flawed. Executives must seek answers to how the company can use intellectual property rights, such as patents and other certification methods. Mr. C also sees patents as extremely important in the future, particularly for global firms. Proprietary technologies like intellectual capital or patents, brands or processes may be foundations for long-term strategic advantages as long as they remain protected. Other more technical assets (like hardware) offer far more value when shared than when used in isolation. A trap is assuming that opportunities for advantage will be available indefinitely. In reality the window for gaining advantage from an infrastructural technology is open only briefly. Newell, 2002, stresses the importance of the knowledge worker. Some of the managers in my sample were concerned about knowledge drain that the knowledge worker may cause. Others saw it as an opportunity.

**Roles** According to Falk & Olve (1996) and Axelsson (1995) roles can be categorized as system users and system responsible. The responsible is in turn divided into three different roles; business and IT-management, change management and IT providers. To utilize the metaphors again, the IT department is the house builder and the B&IT-management is the town planner. Commonly, IT departments are being sidelined by the increase in outsourcing. IT people are largely being left out of key corporate decisions, spending most of their time on the bricks and mortar of technology and application infrastructure, which could be wrong according to Feeny and Willcocks (1998). Instead, the IT function should be analysed as a portfolio of activities to be selectively outsourced. Internal resources can then be focused on helping the business to grasp the opportunities represented by IT. Mr. C suggests that IT professionals have to be educated to handle the political aspects of the organisations.

Mr. C argues another critical matter for information managers, therefore, is a proactive work to nurture the diverse environment and prepare the information systems for effective cross-cultural communication. *The change management* must analyse demands and possible improvement and initiate development projects. The value of a knowledge manager is to bring knowledge issues to the attention of the business manager. Part of the need for a formal knowledge manager function comes from the nature of decentralised organisations. The global diversity is making the role of a knowledge manager even more vital according to Earl, (1999b).

**Conclusions from analysis** Organizations must try to find ways to handle knowledge by the use of IT (knowledge systems, ICT etc). Knowledge must be viewed as a strategic intellectual property and valued thereafter. Most firms were sceptic to knowledge management systems, and none of the firms had clear guidelines to knowledge sharing. The challenge for the global coalition is to develop a knowledge friendly culture and to build a knowledge infrastructure.

Not unexpectedly, there were a grand divergence in the perspectives concerning roles and responsibilities. Interesting was that IT managers took on a lot more responsibility than what managers required them to do. Companies may need to add new positions; maybe a CKO and/or a change manager stress the importance of sharing information and be attentive to the new importance of the knowledge worker.
5.1.3.3 IT themes

**Infrastructure** Magoulas and Pessi (1998) argue the infrastructure is critical to companies' long-term competitive prospects. The starting point for designing effective infrastructure is the corporate strategy. This strategy defines the key competencies and how the firm will deliver them to customers. Rockhart & Ross, 1999). The IT architecture involves converting the corporate strategy into a technology plan. The **IT architecture** should provide the capabilities for the architectures, while systems applications should provide a platform for additional capabilities, thus they may fill both an application and an infrastructure role. The builder of a global strategy must step carefully when designing the infrastructure or seeking out international standards for IT, as some countries in use information policy to protect their national computer and telecommunications concerns, warns C and suggests that senior management "finds friends in the PTTs"—the state-owned post office and telecommunications operators that closely regulate the telecommunications industry. Such contacts show a corporate concern for the issues and a willingness to comply with both the letter and the spirit of the law. Moreover, worldwide variations in hardware and software features, i.e., availability and quality, force firms to use different vendor products in different parts of the world. This causes major obstacles in integrating communication networks, hardware, and disparate systems software for global applications. 50% of the respondents had made grand efforts to standardize infrastructure the last couple of years. They had the administration and security of the network centralized in Buenos Aires. Technical personnel were outsourced, and each country has to sign contracts with local providers for maintenance and technical assistance. The other 50% liked to see an independent configuration of infrastructure.

**Interaction** When discussing interaction between systems, there are mainly two alternatives; to give partners full insight in each other's business (an IT based view) or respect independence and adapt insight to each business process (the business based view). Conflicts arise when independence is demanded in a fully integrated system. In strategic businesses partners seek an independent exchange where they have the freedom of action to reach the overall goal of the system. Cooperative agreement system solutions thus require even more thought on principles for system interaction and structure. Business based messaging is a viable option in inter-organizational systems, because it entitles freedom of action, defined responsibility, storage in each system and independence in operation.

Global companies must be creating relatively simple and clear systems for monitoring and evaluation the individual sub units’ performance. But in company after company the focus of management attention has moved to the integration and cohesion of subsystems. Competitiveness of each unit, the new round of performance improvement must come from better integration across those units. The most important change of the circumstances is the IT capabilities that surround the enormous network that we call the web. The crux has always been the sharing of information and the new technologies that enable organizational responses to the integration needs in ways that were not possible five years ago, says Mr. C. All the IT-managers thought that the most important for coalitions is integration between systems and applications. The business mangers thought that it was a balance between security and economy. One IT manager said, “Naturally it would be great if everything was independently handled, but integration drives costs, and costs are disliked, especially from IT” When activities are outsourced it always has to do with savings that the general management like to make. Interaction between systems is mainly computerized.

---

15 Most common is to configure the WAN in a “star” architecture from where all the sites (in Latin America) take all the services, linked by terrestrial, satellital and VPN over Internet links.
**Investments** There are two different common views on IT spending; either it is regarded as a productivity investment or a cost. The managers in all firms argued that IT spending and performance has a weak correlation, whereas the IT manager argue it does have correlation, how strong the correlation was differed between the interviewed A trillion dollar a year is spent on IT yet researchers have found little correlation between spending and performance. Investments should only be made only if improvements can be measured. Each investment in IT should be compared and evaluated related to other investments. My sample firms had primarily centralized costs for IT (labour costs; contracts and applications costs). Where licences are a big part of the budget, they are purchased at each subsidiary.

**Risks and security** Companies are becoming increasingly dependent on that information in a business is protected. Secrecy, integrity, availability and traceability are all important factors that need the attention of top management. Privacy initiatives are also a matter of strategy (Raval, 2001). The creation of suitable mean for systems coordination and integration, such as autonomous, uniform and/or common systems. The idea is always to increase the possible external communications and developing a pattern for interaction with the contextual environment, without compromising on integrity. Due to the multinational business units in the global organization, each business unit may need to access the information in different periods, and the maintenance strategy needs to cope with this multinational characteristic to eliminate the consequences of the systems downtime. The IT managers and the business managers were largely in agreement; but each firm had different priorities on secrecy, integrity, availability and traceability.

**Planning, realization and change** Planning is about setting common goals, which indeed is essential for a global business. Strategic planning is a step-by-step development of an enterprise-based approach for the future structure versus the structure in use. The objectives for IT support depend on the system paradigm chosen. In the IT based perspective it is simplicity and efficiency; to create simple cost efficient information systems. The business based view stresses dynamic goals of IT support; flexibility, changeability, and replace ability. To develop an effective global information systems plan, the organization should first, understand the current business status in terms of the strengths and weaknesses, recognize all issues faced in the global transition process, and clearly outline short-term and long-term business strategies argues Mr. C. Formal IS/IT planning activities is important for systems effectiveness says managers. Likewise is formal quality bench marketing of productivity measurement. Equally for all companies interviewed. No difference between roles either. The majority of the interviewees in my sample argued that global IS/IT strategies must be evaluated and revised more often than national. 30% of them utilized bench marketing with quality measurement.

The realization of the strategy is even more complicated and involves even more people than the formulation. It covers all the themes discussed previously but if the forming should be performed bottom up, while the formulation is top down.

**Conclusions from analysis** 50% of the firms are trying to standardize infrastructure globally, but there are many barriers to this standardization, legal standards that causes obstacles in integrating communication networks, hardware and software.

The two different perspectives on interaction also appear to depend on the IS paradigm. For the IT managers it was almost simply a cost question, whereas theory assumes IT managers has a more technical perspective. Partners must agree in a compromise what part should be integrated and what should be handled independently. Most firms had a computerized system for communicating, and regarded the storage in each system as vital.

The view on investment did not differ across the boarder but was clearly inconsistent within the three companies. Managers argue IT spending is a cost does not show up on the positive
end of the balance sheet while IT people though it does – long term. Once again, IT manage-
ment seem to have a more strategic vision than managers. Maybe also the view on investments
depends on the perspective on IT; if it is regarded as a system to support business or if it is re-
garded just as IT-hardware. This may explain why so many senior executives are disappointed
by their chief information officers’ performance - their views on this issue fall into different
categories. However, research indicates that such discrepancies will soon be a thing of the past
in the highest-performing companies, as senior managers move towards a more inclusive per-
spective. This emerging "information orientation" mindset should ultimately close the - cur-
rently yawning - gap between corporate performance and the expectations that senior execu-
tives have on the basis of their IT investments.

There were two areas of consistency, evaluation, and risks. The latter did not seem to be af-
fected by global aspects. Security and risk attitude, which seem to be a fairly straight forward
factor. It was also the only factor were opinions were consistent throughout the coalition. Be-
tween firms however, divergences could be observed-

The only difference in planning was that companies in my sample thought that global IS/IT
strategies must me evaluated more often than national. Formal bench marketing was very im-
portant for managers. This was the other area of consistency in views. The measurement of
productivity in the global organization should focus on benchmarking of business processes
and information systems that facilitate processes. The measurement of process maturity as set
by ISO (International Organization for Standardization where ISO 9000:2000 standard is the
latest version of quality assurance system).

5.1.4 Global themes (Q2)

Question 2. Present the issues of global business strategy and global information technology

As discussed, firms have begun to adopt globally integrative strategies in response to increas-
ingly competitive global markets and a IS/IT strategy closely linked to corporate strategy. In
some cases, the information system is a key element in executing a marketing or manufacturing
strategy; in other cases, it is at the very essence of the strategy. Among triggers to internation-
ize are the search for global economies of scale and scope, the development of global products,
and the increasing requirement to satisfy the needs of worldwide customers. The consequent
increased need for global coordination and control has placed greater demands on information
and communication between headquarters and subsidiaries (Keen, 1994). In search of global
efficiencies, many firms have started to move away from a geographic focus and toward a busi-
ness operations orientation.

The external environment and the firm's position in it, influence which information systems a
firm chooses to implement, the design features of those systems, and their effects for the firm
and the industry and management should attentive to opportunities and threats that are sur-
rounding the businesses. The international aspect changes the theme of competitive advantage
to comparative advantages. The basis for creating synergies of global integration is the com-
parative advantage, and this can be achieved with cross-cultural collaboration. Embracing di-
versity, randomly or in a planned manner, has qualitative and quantitative costs attached to it.
Among the global or international companies, the outsourcing alternative increasingly com-
mon, driven by competitive pressures and cost savings intentions. A firm's internal design ele-
ment determines its structure and its culture may influence system design as well as system suc-
cess.
5.1.4.1 Organizational structure and size

Organizational structure refers to formal aspects of organizational functioning, such as the division of labour, hierarchical authority, and job descriptions. Historically most organizations could be characterized as either centralized or decentralized in their organization structures (Hamel & Prahalad, 1990). All the companies in my sample were large conglomerates, the majority within manufacturing. The range of the interviewed firms where internationals and globals. None of the firms, despite their large experience of being on the international market had reached a transnational status, as defined by Bartlett (2004). They all regarded themselves as decentralized, except for one. Mr. C says Firms decentralize to allow managers control specialized information of specific environment and to reduce the information load of centralized organizations. Then they centralize again when the aim is to gain control over the coalition or improve co-ordination. Mr. C suggests moreover that these changes in corporate strategy and structure may be precipitating more centralized global IT activities: one common telecommunications network, shared databases, and standardized reporting and planning systems. He says that, "It is absurd that so many international firms have global business strategies but no corresponding strategy for managing information technology internationally". The shared understanding of the firm's overall global strategy can never be overstated. IT can propagate new business strategies, but a more common manner is to connect IT to an existing global business strategy.

5.1.4.2 Drivers to globalization

The independent, centralized, outsourced or integrated are different types of organizational structure. In turn, firms take on different approaches to internationalization, international, global, multinational or transnational. The global business strategy approaches of Bartlett (1986) are among the most developed because they tie business strategy to a set of organizational forces faced by the firm. Bartlett identifies four broad strategies that a multinational firm may pursue. The firm following a multinational strategy operates its foreign subsidiaries nearly autonomously or in a loose federation so as to quickly sense and respond to diverse local needs and national opportunities. The requirement for local responsiveness is the driving organizational force. The firm employing a global strategy closely coordinates worldwide activities through central control from headquarters so as to capitalize on the economies associated with a standardized product design, global scale-manufacturing, and centralized control of worldwide operations. In this strategy, the firm is organized around a requirement for global efficiencies. The firm following an international strategy exploits parent company knowledge through worldwide diffusion and adaptation. Rapid deployment of innovation is the prime operating principle. The firm following a transnational strategy seeks to retain local flexibility while simultaneously achieving global integration and efficiencies as well as worldwide diffusion of innovations. According to Porter and Fuller, (in Bartlett 1989,p. 69), "Dynamic interdependence is the basis of a transnational company-one that can think globally and act locally."

The interviews offered a range of business drivers for their global applications. Some of these drivers were strongly linked to the needs of the marketplace, whereas others were driven by regulatory requirements. Many business managers mentioned the search for system economies as a driver for global applications. The barriers were foremost the cost of globalization, which is the cost of integrating applications. The political cost is also high, because regulatory restrictions make it difficult to standardize infrastructure. Those who favoured synergies, argued security problems and licenses made it more difficult. Instead it is common that each subsidiary have their own ERP system. 50% of the interviewed companies were preoccupied by standardizing infrastructure. Practical problems include difficulties in the customs with hardware. This is the result of one of Kirshners (the Argentinean president) recent attempts to decrease corruption in Argentina. Often equipment is stopped and the exporter has to pay immense taxes in the customs for applications and hardware.
5.1.4.3 Culture

When planning for a global strategy one must be aware of cultural differences. Culture refers to the shared values, basic assumptions, and behaviours of organizational members. It is tempting for corporations to assume global homogeneity in the way information and IT is managed. But according to research, significant local and cultural differences manifest themselves in this area of corporate activity. For one thing, adoption of new technologies is not instantaneous but diffuses across the world over time. Cultures can be future oriented or past oriented, which affects view on business opportunities and current business operations. Many Latin cultures for example are heavily influenced by the past. Power equity is a diverse concept as units of a parent child organization may have diverse perception of power authority and equality to employees. The Latin cultures are even more hierarchical and formal than Swedish ones, however managers have lower education. End users are less educated in Argentina and IT development and infrastructural issues are far away from European standards, says Mr. C. Whereas Swedish companies have tended to see IT’s decision-support capabilities as a reason to spread decision-making powers more widely, Argentinean decision making is still normally more organisational in nature. Such differences mean that companies should be on the lookout for best practices that may be hidden within local units. Geographical by dispersion is also of concern, like time zones, which may be both helpful and detrimental. The advantage is the round-the-clock information systems development scenario, on the other hand disadvantages of real-time internet and live conferences could be damaging. Religion is not a critical issue between these types of countries but national holidays is affecting working hours and meetings.

5.1.4.4 Conclusions from global themes

Companies may have to move beyond simplistic organisational views that polarize alternatives between world product divisions and country based structures or centralized, decentralized structure. Firms should structure its information systems function to operate in a "mixed mode." Throughout the empirical study I have recognized that different suites of applications will support different business strategies and will therefore require varying degrees of commonality across borders.

Headquarters might have to take strategic responsibility in some decision areas, subsidiaries must dominate in others Subsidiaries can provide headquarters with competitive information and learn about world competitors from the experiences of other subsidiaries. They must fight the battles on behalf of larger strategy and develop systems and infrastructure to incorporate global and local perspectives into tactical decisions. While advances in IT are breaking down the technological barriers to the sharing of information in organizations, organizational structure often remains a formidable barrier to the timely sharing of accurate information as organizational units fear the negative political consequences that may accompany sharing their data with others. Instead of realizing the intended benefits, organizations may find that these fears lead to non-use or misuse of the information system. Similarly, systems that share data across departmental boundaries are especially vulnerable to resistance from users due to lost flexibility.

Simply arranging the organizational chart cannot solve organizational problems; fundamentally new roles should preferably be adopted, and culture can be utilized as a strategic tool. The global IS/IT strategy can articulate how to create systems to track global competitive developments and to support effective responses. There should moreover be a plan for local and headquarters manager education.
5.2 The Literature review questions

The review of the literature led to new questions, raised from three studies highly related to IS-IT- and IM themes.

- Is there a relation between management perspective (their interpretation of the IS/IT strategy and the IS paradigm? (testing the research of Earl, 1989).

- Does the organizational structure have anything to do with the way IT is architecture? (testing the research of King & Sethi, 1999).

- The managers’ role and status influence on information management? The responsibility of the IS/IT strategy often end up in the IT department, and managers take a passive role in the realization (testing the study of Axelsson, 1995).

5.2.1 The IS paradigm and comparison to interpretations (Q8)

Theories within IS/IT give different perspectives depending on their relation to the IS paradigm. The distinction between open and closed, and also between “soft” and “hard” system theory provides an interesting theoretical base. When the components include human beings, the system is referred to as “soft” Raval (2001). Literature also distinguishes between two types of systems, open and closed. There are two streams of research within the area of IS/IT strategy, and the differences lies in the principles of dependence, stability, changeability, availability and interpretation of information (Axelsson, 1995; Magoulas and Pessi, 1998).

The business-based approach is the soft system theory in practice. It stresses coordination between information systems, and includes a dynamic plan of how business will be developed through the strategic consideration of goals, interactive co-operation with process development, understanding of the business model, the roles responsibilities and risks, and the realization and interaction of systems. The IT paradigm is a technical approach, used as a mean to guide the “IT-factory”. The focus is on central control. The former has more to do with production than use. It is implicit that the IT department develops this strategy in isolation from the business strategy. The last part of this analysis can also answer question eight.

**Question 8.** Are interpretations of the concept IS/IT strategy consistent throughout the concern?

Both the objectives for IS/IT strategies, the perception of the IT function, the interaction, and the view on investments of the interviewed firm depend on the approach to the IS paradigm. The objectives for IT support depend on the system paradigm chosen in the sense that in the IT based perspective it is simplicity and efficiency; to create simple cost efficient information systems. The business based view stresses dynamic goals of IT support; flexibility, changeability, and replace ability. The answer to the “alignment question” also depend on the IS paradigm chosen. The approach from the IT factory has been to cast the task as a technology diffusion problem, meanwhile true business based strategists try to find ways to reconfigure the technology and “align” it with business goals and business processes. Traditionally the IT function has been viewed as a support function, not essential to the business management of the firm. This approach has changed as can be viewed in the empirical material. Today managers are more business focused, even the IT managers.

We have also seen how the two major alternatives for interaction between systems, can be correlated to the IS paradigm; to give partners full insight in each other’s business (an IT based view) or respect independence and adapt insight to each business process (the business based view). My research reveals that for the IT managers it was almost simply a cost question, whereas theory assumes IT managers has a more technical perspective. Finally the divergence
between respondents answers as to why an IT strategy is important may also depend on their perspective towards the IS paradigm. Managers and IT people were not in agreement.

A firm's internal design elements seem to determine its structure. Moreover its culture may influence IS/IT strategy design as well as success with conducting the IS/IT strategy. The complete analysis stems out in this research model that aims to give guidelines and a concrete framework to strategy formulators.

5.2.2 Organizational structure and IT (findings from questionnaires)

5.2.2.1 Multinational Global IT strategy

Only one of the firms in my sample (the seven questionnaires) had a truly multinational strategy. Some form of common systems is more a rule than an exception. Although many of the firms made technology choices reflected the influence of local hardware and software vendors as well as the prevailing national communication standards and offerings. For one of these firms, headquarters' system personnel rarely travelled abroad on business and had little knowledge or interest in their subsidiaries' system initiatives. Local profit and loss responsibility, coupled with reliance on local information systems departments and local technology, resulted in non-integrated technology platforms, databases, and applications.

The multinational strategy of Bartlett 1996 best corresponds to an independent approach to global IT operations. The focus is clearly on local responsiveness, and the applications portfolio is strongly oriented toward local requirements. For these firms, the only benefit was unplanned organizational learning emerging from face-to-face contacts between the subsidiaries' and headquarters' systems people and their major users.

The Factory view matches the independent global IT operations which heavily depends on IS for smooth operations. It is largely seen in the multinational companies. Planning has a shorter term and a more operational character; it balances service cost and efficiency. In these businesses risks are concerning stability of systems, as even a one hour disruption in systems impairs the performance of the business unit. The managers in these companies sees a value of IS/IT in lead-time for product development, customization, and delivery likewise it is hoped to assist a higher level of customer service and satisfaction.

5.2.2.2 Centralized Global IS/IT strategy

Five of the firms have imposed corporate-wide IT solutions on subsidiaries, at least for some applications. For many firms the headquarters-driven approach was not only desirable but required. These global firms strive for worldwide efficiencies, usually in support of global products. Here the compelling business need and the opportunity to harvest worldwide economies of scale force the firm toward a global systems solution. This group constitutes the largest part of my sample. For instance, large semiconductor manufacturers with global customers and products, rationalized production, and stiff international competition have little choice but to seek global efficiencies. Centralized IT may provide some efficiencies of its own, but, more importantly, it provides the coordination and control necessary for efficient operations throughout the firm. The headquarters-driven global IT appeared to run into problems without a strong global business need. Efforts resulted in resistance from the systems manager assigned overseas. The managers in this category argue IS/IT activities offer value that can be used to analyse company or industry sales data bases, to transfer knowledge, etc.

5.2.2.3 The international strategy

This outsourced, with intellectual cooperation approach to managing IT seems to fit well with Bartlett (1996) international strategy. Four of ten firms in the sample belong to this group according. The
objective in this case is to rapidly disseminate corporate innovation while continuing to provide the flexibility required being responsive to local business entities. The Support view (support role) is dominating in this category, it is not dependent on IS activities, although their budgets might be large. These types of activities are not critical to the companies’ success. Large manufacturing companies are typical. IS activities is managed on a much lower level than in many other companies and commitment to planning, particularly in upper management is quite low. Some comments from general directors were “there’s no payoff in spending my time here. A grand concern in these type of companies is that business managers are occupied with the international issues, and the IT specialists has the freedom to steer the IT-strategy, giving that the strategy might treat the technical solutions but the alignment to business strategy and the perceivability over main objective diminishes. Any improvements will have insignificant impact on the company as a whole. My research reveals a surprisingly large number of companies in this category. The IT manager has less status, and investments are not considered to be directly related to competitive advantage. For some of the firms in my sample, strong links existed between the home office and foreign subsidiaries, but the linkages were those of cooperation and mutual assistance rather than management control. In these organizations, headquarters personnel attempted to influence the information technology choices of their foreign subsidiaries, ideas and personnel were exchanged regularly, and joint application development efforts were initiated. If headquarters had already developed an application that the subsidiary now required, the subsidiary might ask for a copy to modify. In low cost producers, such as the support companies, the low cost producers, IS is assumed to lower labour costs, reduce fixed assets expenses for each production unit, permit lower overall costs by reducing waste (through a better matching of orders, material and machines.

5.2.2.4 Transnational strategy and integrated global IT

Bartlett and Ghoshal (1989) have proposed that a transnational strategy will supersede the multinational, international, and global strategies currently pursued by different firms. According to Bartlett and Ghoshal, firms will seek this transnational status to permit them to simultaneously be globally efficient, provide local responsiveness, and quickly diffuse organizational innovation. The companies in the study had yet to reach the truly transnational status. Feeny, et al. (1990) have proposed that firms pursuing a transnational strategy will require applications of information technology that reach across boarders.

5.2.3 The responsibility of managers

Axelsson (1995) suggest it is dangerous to let the IT department take on the responsibility for the formulation and realization of the strategy, and suggests this is what happens in most organizations today. Falk and Olve (1996) have discussed a number of areas relating to the IT managers responsibilities, such as determining what information is most important for the firm’s competitive advantage and sustainability, drawing guidelines on areas of responsibility, design a policy for questions regarding what information should be stored and the responsibility for maintenance of the storage, topicality value, and how the costs should be distributed for maintaining databases. Finally, safety is an IT management question in reality. The information intense organization is vulnerable and the commercial risks are therefore very high. Personal integrity is related and increasingly important area for managers, thinking of commercial risks weighed against the opportunities IT provides. It is also an ethical question, forcefully regulated. Both the managers and the IT people in my sample took on more responsibility when asked about their roles than what corresponded to the position according to others. The IT managers thought that almost all areas were included in their area of responsibility; strategic planning, to make sure proposed projects are aligned with future structure, authorize development projects, specify demands and ask for an IT-solution, procure effective it solutions, strategy maintenance, IT-visioning and IT procurement, evaluate proposals and relate to value of
possible improvements, implement the IS/IT strategy, evaluate the performance of roles are all IT management's responsibility. Moreover, they thought that defining business processes should be shared responsibility between IT managers and business managers. The realization and evaluation of the strategy should also be a common effort, between managers and teams of specialists. The business/strategy management, however, thought that it was the task of the IT manager to work out solutions and specify necessary investments costs. They also thought that IT managers should deal with developing the business processes. IT managers should solely create processes that can support the enterprise. A few of the business managers thought that everything related to IT should be outsourced. My investigations show that Axelsson's (1995) concerns are definitely worth while discussing.

Figure 9 The implications and results, an analysis model.
6 Conclusions

This study aimed at finding the themes that constitute a “generic” IS/IT strategy and explain how business/strategy management and IT specialists interpret the concept IS/IT strategy in a global organization. Furthermore, I aimed to give some guidelines to managers and strategy formulators.

- Throughout this paper, we have seen that there is no “best” strategy position. If there were a secret formula to IS/IT strategy, it would not be strategic, because all firms would adopt it. What can be demonstrated is that there is usually one approach that is better than another, depending on the situation, management’s skills, culture, organizational structure, approach to globalization and personal opinions.

- The general themes that can be included in an IS/IT strategy are IS- IM- and IT strategy. In these concepts I include; strategic planning and alignment between business strategy and IS strategy, competitive advantage, knowledge management, responsibilities, system architecture, interaction, and security. I moreover intended to present the most common approaches to global business strategy defined as multinational-, global-, international- and transnational- strategies.

- The pre-study generated useful information on global IS/IT strategies. We agreed that a generic global IS/IT strategy be formulated, but shall be seen as a framework and must be adapted to each firm. All the parts of a strategy must further be carefully adapted to function in a global coalition, with special attention to culture. The components mentioned in the previous section are all examples of parts that may be vital in strategy formulation. Another wisdom that stems from the pre-study was that a good global strategy is one that is flexible, forward looking, and frequently evaluated. Depending on firms organizational approach it may be beneficial with a single, centralized strategy.

- The interviews helped me understand respondents’ opinions on why the IS/IT is important. The divergence between respondents answers may depend on their perspective towards the IS paradigm, but can also be dependent on culture such as time perspective. Managers and IT people were not in agreement. Generally, the Argentinean IT people desired short term gains, while business/strategy management in Sweden focused on cost savings.

- My findings on the interpretations are contradictory to Earl’s study of 1989. The discrepancy may depend on the cultural differences between Sweden and Argentina.

- The interpretation of the IS/IT strategy is in accordance with theory within the research area, with a few exceptions. On the contrary, I found that the interpretations of the IS/IT strategy not is consistent throughout the concern. Axelssons (1995) concerns that the IT department have too much responsibility for the IS/IT strategy is valid.

- Finally, in contrast to King & Sethi’s research from 1999, the global firms I interviewed did not have a more centralized structured IT strategy. The structure did not seem to matter in my sample.

The implications to managers are that the organizational structure chosen should not be steering the politics for architecture, moreover that IT specialist with a technical view can not be responsible for a global strategy. Managers are encouraged to develop knowledge management, to include intellectual assets in the IS/IT strategy and work with culture enhancement programs.
7 Discussion of results

In the beginning I questioned whether the perspectives of IT really have something to do with the way IT strategies are formulated and interpreted. The analysis shows it does indeed. We have seen how the business based versus the IT based approach really has an impact. The IS factors seem to be independent of hard facts and organizational structures. We have also seen how the organizational approach determines the “hard” factors, such as the architecture and the infrastructure. No conclusion can be drawn as far as the IM factors; they are probably very subjective and differ from person to person. My implication to managers is to leverage the IM factors such as knowledge management, and the organization will likely achieve great advantages. In theory and recent research it is proven how knowledge management systems that are leveraged to their full potential can offer superior competitive advantage. Moreover, cultural diversity can be seen as the asset it actually is. The nature of culture seems to be one area of increasing interest as organizations and there is/IT strategies become more global. When business units and subsidiaries are spread across nations and have quite distinct cultural attitudes and characteristic, employees in global companies are more likely to have greater chances of dealing with foreign colleagues. In order to smoothen the communications and information flows between employees from different cultural backgrounds, global corporations should consider the introduction of multi-cultural skills development programs. These programs may consist of language and communication learning, and recognizing and understanding of culture differences. I see this area as one of the more important with regards to competitive advantage in this era of “knowledge workers” and high-flying systems for knowledge sharing. Indeed it should be regarded as a part of the company’s intellectual property, maybe even accounted for in the balance sheet? The latter is a very interesting area for further research.

Worth to notice, once again is that my results are only directly applicable to Swedish Argentinian organizations. However, they may indeed be utilized to understand the nature subsidiaries and managers opinions anywhere in the world. The literature study is of a comprehensive sort and offers indeed value to the interested and attentive manager or IT-specialist. The effect of globalization discussed in this paper and the prominent role of IT really are questions of mayor importance for managers today. Although all three hypotheses were approved it shall not be viewed as an exact fact. I would like to reiterate that the result of this specific study has many unique traits.

7.1 Reflections

The current situation in Argentina made it a unique situation, maybe not generlizable to many other countries in the world. To increase generalizability, it is always desired to have a larger interview sample; however the questionnaire helped fill information gaps where interviews were not possible to carry out. It would also have been interesting to compare it to another country where similar subsidiaries exist. Despite this, I argue that managers around the world still may have use for the many implications in the study. Through an increased understanding and a common vision of objectives, I hope that this study can contribute to a better development process and maintenance of IT-strategies in firms, both in national and global firms.

I have not accomplished to interview exactly the same positions in every firm, although I think that the discrepancies in the achieved information due to this issue are probably very small. It is nevertheless important to be conscious that it could have affected the result. To directly compare positions in the two countries would have taken the study to another dimension and indeed been interesting. However, I sincerely think that within the frames of a master’s thesis a wider scope than this is almost impossible. An increased sample or a more conscious sample is possible but that would have to be realized on the expense of other important parts of the study.
I have never written about anything as large, complex and difficult in my life, at times I was nearly giving up. Being in Argentina during the six month period I wrote the thesis made the process more complicated, but also more interesting. Most importantly, I have learned that the existence and stability of economy and politics not is to take for granted. I experienced that multinationals and global companies are treated different in a country like Argentina, and that the IT strategy sometimes is unknown. Post festum, I must admit that the result is very rewarding, but the process itself was the most worthwhile learning experience I have ever been through.

Finally I would like to thank Petter Envall for his inspiration, Mr. Hugosson my advisor, the library services, the Swedish embassy in Argentina, Mr. Cassinelli at IFS and the respondents in Argentina and Sweden who made the study possible.
References


**None published material**


www.mckinsey.com/nasscom

**Databases**

Appendix A Question guide

PART 1.

Name and title:

Email and company:

Size number of employees______ and sales_______

Are you able to state the firm’s overall approach or strategy for managing global information technology strategy? Yes ☐ No ☐ If yes____________________________________________

General Director has insight in IT/IS activities? Yes ☐ No ☐

What are the drivers of a global IT/IS activity?________________________________________

The problems in global IT/IS activities?______________________________________________

What is an appropriate time frame for an IT-strategy?__________________________________

PART 2.
The following concepts are example of what could be vital parts of a strategy. Please rate the following components in regards to your own opinions about IT/IS strategy, most important with a 6, least important with a 1.

| 1. Strategic planning; and alignment with business strategy |
| 2. Competitive advantage correlated to the IT/IS strategy |
| 3. Articulating plan for knowledge management |
| 4. Defining responsibilities and roles |
| 5. System architecture & Infrastructure & System interaction |
| 6. Security & Risk Knowledge |

Comments:

Please answer the following questions to the best of your ability. Rate by marking the most corresponding, 5 highest, 1 lowest if no other instruction is specified.

Planning

IT/IS activities - strategic ☐ or supportive ☐

Formal IT/IS planning activities is important for systems effectiveness 1 2 3 4 5

How vital is formal quality bench marketing of productivity measurement 1 2 3 4 5

Comments:

Alignment with Business strategy

Importance that proposed IT projects is aligned with future Business structure? 1 2 3 4 5

To what extent should the IS strategy support the business strategy 1 2 3 4 5

Should the IT/IS strategy formulation work handled internally ☐ or outsourced ☐?
Comments:

**Competitive Advantage**

Can global IT/IS strategy bring a sustainable advantage? [ ]
IT strategy’s influence on bottom line and firm performance? [ ]

Comments:

**Knowledge Management**

Should knowledge in global coalitions be shared knowledge systems? [ ]
How important are strategies for knowledge sharing in the IT/IS strategy? [ ]

If yes why:

**Responsibilities, roles**

The desired status of the IT/IS Manager in terms of compensation, reporting level etc? [ ]
Decisions regarding IT/IS activities are mostly taken in an informal manner [ ]
Physical distance of IT/IS group and general management team affects strategy [ ]

<table>
<thead>
<tr>
<th>Whose responsibility is it?</th>
<th>IT dep</th>
<th>IT Mgt</th>
<th>Bus Mgt</th>
<th>Outsour</th>
</tr>
</thead>
<tbody>
<tr>
<td>A) Strategic planning</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>B) Proposed projects are aligned with future structure</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>C) Authorize development projects</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>D) Specify demands and ask for an IT-solution</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>E) Procure effective IT solutions</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>F) Develop business processes</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>G) To work out IT solutions and specify necessary investments costs</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>H) IT strategy maintenance</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I) Architecture-visioning</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>J) Infrastructure procurement?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>K) Relate IT activities to value of possible improvements</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>L) Evaluate proposals and relate to value of possible improvements</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>M) Implement the IT/IS strategy</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>N) Evaluation of the performance of roles</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>O) Evaluation of the strategy</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Comments:

**System architecture & Infrastructure & System interaction**

Who should be responsible for architecture visioning and planning? [ ]
What is more important in coalitions, independence [ ] integration [ ] between systems?

To what extent should infrastructure be globally standardized? [ ]
To what extent is IT spending and performance positively correlated? [ ]

Comments:
Security & Risk attitude

What is meant by IT security? Rate the following four statements

Secrecy- protecting our business secrets
Integrity- To secure that information is always correct
Availability – Guarantee that information accessible when needed
Traceability – Check, control and improve business

1 2 3 4 5

Comments
Appendix B Question guide per mail

Best Respondent

This is a questionnaire concerning your interpretation of IT/IS-strategy. The questions should take no more than 15 minutes and your responses are of indispensable value to the fulfillment of the study. The result may be of interest to you or any professional with any IT responsibility as it aims to deepen the understanding for different perspectives on IT/IS strategies, and revise existing theories, with the theme of internationalization in mind. Thank you for your kind cooperation.

**Short description of the purpose:** A generic IT strategy might not exist; however, I have identified some themes that seem to be more generic than others. The purpose is to compare the views within the firms, and between firms. The questions thus concern perspectives and priorities of these generic areas in IT strategies.

Only the first part concerns the firm. Part two is subjective, which means you are asked to express your personal view, therefore, it is not important if you do not consider yourself as an expert within the area or if your views do not correspond to practice in the firm. These questions can be answered no matter your familiarity with the area or the organizational structure of organization. The answers are confidential and neither the companies nor peoples names will figureate in the thesis.

**What to do?** Please complete this questionnaire to the best of your ability. When pointing at the grey area a list of alternatives will appear. When ready – save as a new document and mail back. Please advise me if you would like to take part of the finished result of the thesis. I am also grateful for any comments.

Again, thank you very much for your cooperation!

Matilda Hannäs
Matilda_hannas@yahoo.com.ar

Example: **Alignment with Business strategy**
Top management’s involvement in decisions regarding IT strategy Rate

**PART 1.**

Name and title:

Email and company:
Organizational structure (mark appropriate)

- Multinational – independent IT –strategy
- Global – centralized strategy
- International – outsourced, but intellectual cooperation/ innovation
- Transnational – mix

Size (number of employees and sales )

General Director has insight in IT/IS activities?

What are the drivers of a global IT/IS activity?

The problems in global IT/IS activities?

Should the general strategy support global effectiveness or local responsiveness?

Are you able to state the firm’s overall approach or strategy for managing global information technology strategy? choose yes/no If Yes:

PART2.
The following concepts are example of what could be vital parts of a strategy. Please rate the following components in regards to your own opinions about IT/IS strategy, most important with a 6, least important with a 1.

Strategic planning; and alignment with business strategy Rate
Competitive advantage correlated to the IT/IS strategy Rate
Articulating plan for knowledge management Rate
Defining responsibilities and roles Rate
System architecture & Infrastructure & System interaction Rate
Security & Risk Knowledge Rate

What is an appropriate time frame for an IT-strategy? timeframe

Please answer the following questions to the best of your ability. Rate by marking the most corresponding, 5 highest, 1 lowest if no other instruction is specified.

Planning

IT/IS activities - strategic or supportive choose yes/no

Formal IT/IS planning activities is important for systems effectiveness choose yes/no

How vital is formal quality bench marketing of productivity measurement choose

Alignment with Business strategy

Importance that proposed IT projects are aligned with future Business structure? Rate

To what extent do the IT/IS strategy support the execution of the business strategy Rate

Should IT/IS strategy formulation work handled internally or outsourced? choose yes/no
Competitive Advantage

Can IT/IS strategy bring a sustainable advantage? choose yes/no
IT strategy’s influence on bottom line, firm performance and lead time in particular? Rate

Knowledge Management

Should knowledge in global coalitions be shared with knowledge systems? choose yes/no
How important are strategies for knowledge sharing in the IT/IS strategy? Rate

Responsibilities, roles

The status of the IT/IS Manager in terms of compensation, reporting level etc. choose
Decisions regarding IT/IS activities are mostly taken in an informal manner choose yes/no
The physical distance of IT/IS group and management team affects strategy choose yes/no

Whose responsibility is it?
1. Strategic planning Choose from list
2. Make sure proposed projects are aligned with future structure Choose from list
3. Authorize development projects Choose from list
4. Specify demands and ask for an IT-solution Choose from list
5. Procure effective IT solutions Choose from list
6. Develop business processes Choose from list
7. To work out IT solutions and specify necessary investments costs Choose from list
8. IT strategy maintenance Choose from list
9. Architecture-visioning Choose from list
10. Infrastructure procurement? Choose from list
11. Relate IT activities to value of possible improvements Choose from list
12. Implement the IT/IS strategy Choose from list
13. Evaluation of the performance of roles Choose from list
14. Evaluation of the strategy Choose from list

System architecture & Infrastructure & System interaction

What is most important in coalitions, independence or integration between systems? Choose from list

To what extent should infrastructure be globally standardized? Rate
To what extent is IT spending and performance positively correlated? Rate

Security & Risk attitude

What is meant by IT security, rate the four following four statements.
Secrecy- protecting our business secrets Rate
Integrity- To secure that information is always correct Rate
Availability – Guarantee that information accessible when needed Rate
Traceability – Check, control and improve business Rate
Appendix C Introduction letter to pre-study

Best Sir D. Casinelli

I am a Swedish graduate student currently in Buenos Aires to study and do research for my masters’ thesis. The subject is business based IT strategies in transnational companies (A case study on Swedish Argentinean subsidiaries). This matter has interested me for a long time, and when I received a grant from a Swedish foundation I could finally begin to carry out my research plans, believing it is of great importance to companies on the international arena.

Consequently, I am very eager to hear your opinions on IT/IS strategy formulation and interpretation, the issues in global IS/IT strategies and what you believe is good IT strategy. Your views and great experiences, as an independent international (technology/business) consulting firm located in Argentina is very important in this work and will constitute my pre-study. I would highly appreciate a chance to meet with you. Your participation is very important and will be noted in the paper.

Thank you for taking your precious time to read this email. I look forward to get in contact with you.

Best Regards
Matilda Hannäs

Discussion themes for pre-study

1. What factors are important in an IS/IT Strategy?
2. Could you classify each one as a part of IS- IT- or IM-strategy?
3. Can a generic strategy be formulated?
4. Strategic or support activity?
5. General Director has insight in IT/IS activities?
6. Role and status of IT Manager in global firms
7. How are costs viewed for IT/IS strategy activities
8. The consequences of globalization on IT Strategies
9. The prominent role of IT in shaping global business strategies
10. How can IT strategy development and business development be aligned?
11. What are the drivers of a global IT/IS activity?
12. The problems in global IT/IS activities
13. International data sharing independence or integration?
14. What role has knowledge management in global organizations
15. Centralized, decentralized infrastructure? Or outsource IT function?
16. What is meant by IT security for global firms? (Secrecy, integrity, availability or traceability?)
17. Is it possible to maintain a good IS/IT strategy in a global coalition?
Appendix D Introduction letter to Argentinean companies (Spanish)

Por la atención del jefe y jefe del sistemas/jefe gerencial

Estimados Señores,

Me llamo Matilda y soy una estudiante sueca. Actualmente estoy en Buenos Aires para aprender castellano, estudiar, y finalizar la investigación de mi maestro tesis en sistemas. El tema de la tesis es “las estrategias tecnológicas en las compañías suecas con filiales argentinos”. Esta materia me ha interesado durante mucho tiempo, y cuando recibí una beca de una fundación sueca que podría finalmente realizar mis planes de la investigación en Argentina.

La idea es de examinar las opiniones de gerentes en ambos países a fuerza de entrevistar dos gerentes, el jefe gerencial local y el jefe de sistemas local. Por lo tanto, tengo muchas ganas de escuchar sus opiniones sobre factores con respecto a la formulación de la estrategia de información, tecnología y sistemas (en inglés: IT/IS strategy o escrito en largo; information technology/information systems strategy).

Les agradecería altamente una ocasión de entrevistarles; diez minutos serían bastantes para una entrevista informativa. En esta breve reunión, pediría que ustedes contestaran un cuestionario, y charlaremos un rato.

Ustedes con sus opiniones y grandes experiencias son muy importantes en este trabajo y constituirán mi estudio práctico y ayudará de la resolución del propósito de las tesis. Por lo tanto, es muy urgente su participación y será anónima o observada en el papel, como quieran. Si ustedes no tienen el tiempo para la entrevista, les pido por favor si puedo enviar el cuestionario por mail, y ustedes lo contestarán en la misma manera.

Reiterando mi agradecimiento y esperando un pronto contacto con ustedes nuevamente. Por favor contáctenme por mail para arreglar lugar y tiempo.

Se despide muy atentamente

Matilda Hannäs

Appendix E Introduction letter to Swedish companies (English)

To the attention of the chief and head of systems and strategy

Dear Sirs,

My name is Matilda and I am a Swedish graduate student currently in Sweden to finalize the investigation of my master thesis in systems. The majority of my studies have been on Argentinian land, interviewing Swedish firms in Buenos Aires. The subject of the thesis is "the interpretation and formulation of IT strategies in Swedish Argentinean coalitions”. This matter has been of interest to me during long time, and when I received a scholarship from a Swedish foundation it helped me realize the research. The idea is to examine the opinions of managers in both countries. Thus I have already interviewed your Argentinean partner XXX XXX. Please contact me to schedule a brief meeting. Your great experiences and knowledge is very important in this work and will complete my empirical work.

Reiterating my gratefulness and hoping to hear from you soon.

Kindly,

Matilda Hannäs