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**AN INTERPRETIVE APPROACH TO ANALYSING
THE ROLE AND VALUE OF INFORMATION SYSTEMS
IN JORDANIAN FINANCIAL ORGANISATIONS**

**RIFAT ODEALLA SHANNAK
DOCTOR OF PHILOSOPHY**

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May 1999

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Summary

Analysing investments in ISs in order to maximise benefits has become a prime concern, especially for private corporations. No formula of equilibrium exists that could link the injected amounts and accrued returns. The relationship is simply not straightforward.

This thesis is based upon empirical work which involved sketching organisational ethnographies (four organographies and a sectography) into the role and value of information systems in Jordanian financial organisations. Besides deciphering the map of impacts, it explains the attributions of the variations in the impacts of ISs which were found to be related to the internal organisational processes: culturally and politically specific considerations, economically or technically rooted factors and environmental factors. The research serves as an empirical attempt to test out the applicability of adopting the interpretive paradigm to researching organisations in a developing country.

The fieldwork comprised an exploratory stage, a detailed investigation of four case studies and a survey stage encompassing 16 organisations. Primary and secondary data were collected from multiple sources using a range of instruments.

The evidence highlights the fact that little long term strategic planning was pursued; the emphasis was more focused on short term planning. There was no noticeable adoption of any strategic fit principle linking IS strategy to the corporate strategy. In addition, the benefits obtained were mostly intangible. Although ISs were central to the work of the organisations surveyed as the core technology, they were considered as tools or work enablers rather than weapons for competitive rivalry. The cultural specificity of IS impacts was evident and the cultural and political considerations were key factors in explaining the attributions of the variations in the impacts of ISs in JFOs. The thesis confirms that measuring the benefits of ISs is problematic. However, in order to gain more insight, the phenomenon of 'the use of ISs' has to be studied within its context.

KEY WORDS: Information Technology, Jordan, Culture, Interpretivism, Organisational Change

Dedication

It fills me with great joy to dedicate this piece of work to whoever finds it useful in pursuit of knowledge and the ultimate truth

My special dedication goes to Rudayna
and our children; Ruba, Mu'ath and Fatimah

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There are numerous people whom I wish to acknowledge and express my wholehearted gratitude towards. First and foremost Rudayna and our children as I could not possibly envisage having undertaken my work without them being next to me. I would like to thank my supervisor Dr John Edwards for the guidance, understanding and support he has given me throughout the research period. My thanks go also to Aston Business School Staff and in particular, Mr. John Kidd and Ms. Pam Lewis. I was fortunate to have had friendly research students on the eleventh floor who made the PhD research experience less lonely so thanks to them. I wish also to express my gratitude to Jordan University which has kindly provided the financial support for the whole duration of my PhD research.

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List of Acronyms and Abbreviations

AFM	: Amman Financial Market
ATM	: Auto Teller Machine
BFCS	: Banks and Financial Companies Sector
CASE	: Computer-Aided Software Engineering
CBA	: Cost/Benefit Analysis
CBIS	: Computer-Based Information System
CBJ	: Central Bank of Jordan
CEO	: Chief Executive Officer
CIO	: Chief Information Officer
DSS	: Decision Support System
EDI	: Electronic Data Interchange
EP	: Executive President
EU	: European Union
GCC	: Gulf Co-operation Council
GDP	: Gross Domestic Product
GM	: General Manager
GST	: Giddens Structuration Theory
HNW	: High Net-Worth
IM	: Information Management
IMF	: International Monetary Fund
IRS	: Information Reporting System
IS	: Information System
IT	: Information Technology

JD	: Jordanian Dinar
JFOs	: Jordanian Financial Organisations
LAN	: Local Area Network
L/C	: Letter of Credit
L/G	: Letter of Guarantee
MICR	: Magnetic Ink Character Recognition
MIS	: Management Information System
NUD*IST	: Non-numerical Unstructured Data Indexing Searching and Theorising
OA	: Office Automation
ROE	: Return On Equity
ROI	: Return On Investment
ROM	: Return On Management
SPSS	: Statistical Package for Social Sciences
SWIFT	: Society For World-wide Interbank Financial Telecommunications
SWOT	: Strengths, Weaknesses, Opportunities and Threats
TPS	: Transaction Processing System
US	: United States
WAN	: Wide Area Network
WTO	: World Trade Organisation

PART I
BACKGROUND AND SUMMARY

Chapter One

INTRODUCTION

It is a profoundly difficult task to fully understand the role of Information Systems (IS) in Organisations. However, it is widely considered impracticable to envisage carrying out primary or support organisational activities without them (Porter, 1985; Porter and Millar, 1985; Chan and Huff, 1994). They are important as claimed by the many advocates for the procurement of advanced versions of such systems into most types of organisations (Davis and Olson, 1985; Eason, 1988). This has become the generally accepted wisdom.

This thesis describes empirical research that has investigated ISs in some organisations in a developing country. The work is focused on the specific organisational contexts of Jordanian Financial Organisations (JFOs). It is intended to increase the understanding of the organisational role of ISs and contribute to the ongoing research in this area.

1.1 Background to the Research

Advances in the field of Information systems/Technology occur almost daily. The growth of this active and dynamic field continues unabated.

It is important to point out that the thesis is concerned with the use of IT and the link this has to organisational ISs. Rather than highlighting the different definitions for ISs, the emphasis is placed on the need for those systems in organisations. Suffice to say, and in line with Alter's thinking (Alter, 1996): ISs use IT to capture, transmit, store, retrieve, manipulate, or display information as used in business processes. ISs consist of people, Hardware, Software and working practices. They are intended to serve multiple purposes, and according to Jayaratna (1994), ISs have five important functions: Information processing and usability, educating and learning, information systems development, management and control, and strategy building and planning.

Strassmann (1997b) has divided the development of the organisational use of ISs into eight cycles (or eras) namely:

- 1- 1930- 1957 Machine accounting era.
- 2- 1957- 1963 Machinisation cycle.
- 3- 1963- 1969 Data centre cycle.
- 4- 1969- 1975 Time-sharing cycle.
- 5- 1975- 1981 Minicomputer cycle.
- 6- 1981- 1988 Microcomputer cycle.
- 7- 1988- 1995 Client/Server investment cycle.
- 8- The present time Web and Intranet-based computing cycle.

Researchers in the IS/IT field use different names for referring to the same entity which is confusing. This was pointed to by Bjørn-Andersen et al (1986) as the 'definitional problem'. Silver (1991) has discussed the history of 'what he called Computer-based Information Systems (CBIS)', from a functional perspective. He described the first CBISs as Transaction Processing Systems (TPS) which helped reduce costs and provided the processing power to do handle more business activity. The second generation brought about Management Information Systems (MISs), according to Silver, as the need had arisen as a by-product of processing large quantities of transactions. They resulted from an appreciation of the potential usefulness of using reported data for planning and controlling. This potential was not realised by many managers as those MISs were, at that early stage, primitive. Ackoff (1967) described them as 'management misinformation systems', because their outcome was data and not information that would have been readily available for decision-making. Dearden (1972) went one step further than Ackoff and dubbed such a system a 'Mirage'. The MISs were basically non-executive reporting systems because they merely provided broad image reporting that lacked precision. However, the expectation was for systems that would support decision-making. Those Decision Support Systems (DSS), as they were termed by Gorry and Scott Morton (1971), at the time were starting to have centre focus due to an emerging functional necessity.

Parker (1989) proposed a taxonomy for computer based MISs in organisations that may comprise any or all of Transaction Processing Systems (TPS), Information Reporting systems (IRS), Decision Support Systems (DSS), and Office Automation (OA). Other writers in the field have offered similar ways of discussing MISs (e.g. Kanter, 1984; Ahituv and Neumann, 1986; McNurlin and Sprague, 1989; Kroenke, 1989; O'Brien, 1991).

The appreciation of the potential of IT goes back, as per Strassmann's categorisation for the first era and the second cycle, to the late 1950s and early 1960s. In fact, many of the 1958 impact prognostications made by Leavitt and Whisler (1958) have already occurred. They had foreseen the practical impacts involving top and middle management, and affecting the organisational redistribution of work activities. Leavitt and Whisler explained their prognostications in four points as follows:

- 1- Information Technology (IT) should move planning to a higher hierarchical level on the organisational chart. Work will be programmed and jobs at the middle management level will become highly structured.
- 2- Large organisations will recentralise and top managers will do most of the analytical and creative work.
- 3- Reorganisation of middle management jobs by relegation, in status and compensation, or promotion to top management level.
- 4- Clearer demarcation between middle and top management.

In addition, through noticing the rapid progress in technical discoveries and development of applications, researchers in the field have continued to put forward what might have been considered odd toned and far reaching hopes. Toffler (1980) has suggested that the information revolution is 'The Third Wave' after the agricultural and industrial revolutions that shape our civilised world. In general, what we now take for granted were some hesitantly made predictions at one time. Those were not plausible to most people, but now nearly all are realities. We have the office that functions with reduced number of reams of

paper¹, the unmanned factory, the electronic cottage and the global village. From a strategic point of view Earl (1988) suggests that ISs can give a competitive advantage and help improve productivity and performance. In addition, Earl postulates that they enable new ways of managing and organising, and assist in developing new businesses.

IT has been dropping in cost but improving in functionality at a remarkable rate of 20 - 30 % per year (Scott Morton, 1989). This does not readily warrant higher investment figure in IS/IT, as the return is uncertain. Many researchers and practitioners advocate the 'productivity paradox' in this context (Brynjolfsson, 1993)¹, where there is no resulting proportional increase in productivity that matches similar increases in IS/IT investment. Pattie (1986) reported that in a 1984 study about technology, only 45% of companies agreed that the new technology had made any or little impact on their work in the previous five years, and 39% mentioned that there was no defined strategy for innovation or plan for using the new information technology in the following five years. Robert Solow (Nobel Laureate economist) commented to this effect when he said "We see computers everywhere except in the productivity statistics"³. Strassmann (1997a) has clearly explained that excessive IT spending is not warranted as the return is proportionally much smaller. He quoted the investment firm Morgan Stanley as finding that information technology investment accounted for 48% of total business equipment spending but only 2% of revenues of firms were attributed to IT. Strassmann believes that existing organisational problems are not overcome by increased investments in ISs as he contends that:

'the best computer technologies will always add unnecessary costs to a poorly managed firm'.

¹ This has proven to be a controversial point. It must be stated that the majority of observers argued that such an early prediction was incorrect (c.f Walsham, 1989).

² Brynjolfsson moved on to acknowledge the productive nature of IS (c.f Brynjolfsson and Hitt, 1993; 1995). In fact, they have reported that the gross annual return on investments for computers was about 60% and claimed that 'the productivity paradox' disappeared by 1991. (Brynjolfsson and Hitt, 1995).

³ Quoted from Strassmann (1997c). Several writers have quoted Solow's remark without documentation.

While looking at the international dimensions of the productivity paradox, Dewan and Kraemer (1998) reported that IT was not to be blamed for the slowdown in productivity growth. In fact, their results indicated that IT investments are contributing at a rate that is higher than their factor share in the production. Furthermore, Dewan and Kraemer explained that with the increase in total investment in IT, its economic contribution will rise to the extent that it will be more visible and no longer debatable. Ives (1994) also gave counter-arguments regarding the productivity paradox. For example, he stipulated that problems may be related to a particular sector or even the measures used might be faulty. Furthermore, researchers might have been asking the wrong questions. Ives raised further points like productivity may not mean profitability or the time to investigate productivity was, maybe, too soon. Scott Morton (1991) explained that a possible root cause for the lack of impact of IT on the improved corporate performance is the unwillingness of the organisations to invest *heavily* and *early enough* in human resources.

On top of that, one can not make a full investment discussion of ISs in organisations without asserting the importance of evaluation or assessment of those systems and their impacts. Ahituv and his collaborators described the post-implementation evaluation as the most neglected activity along the system life cycle (Ahituv et. al, 1986). Investment in ISs and the evaluation of those systems are two interlinked and inseparable topics.

1.2 Research Justification and Objectives

This section provides the reason for the selection of Jordan as the country to carry out the research in, and of JFOs as the members of the researched population. In addition, sub-section 1.2.2 presents a justification for the research within the area and topic of research and gives a view of the research aims and objectives.

1.2.1 The Choice of Jordan and Jordanian Financial Organisations⁴

Prelude

Jordan is one of the smallest economies in the Middle East and North African region. The population, according to figures provided by the Jordanian Department of Statistics, was approximately 4.6 million inhabitants in 1997, with population growth rate of 3.4%. The male percentage is 52 % and 48 % of the population are females. It is a country of youth as 42% of the people are under the age of 15 years. The literacy rate at 85% of the population is one of the highest in the region and among developing countries in general. Almost one fifth of Jordanians go on to higher education and approximately one in every 400 Jordanians has a postgraduate degree.

Figure 1.1: A Map of Jordan



Jordan has a strategic location at the confluence of three continents and its terrain extends to 96,188 square Kilometres. It has desert in the east and mountains in

⁴ Figures and other details were obtained from: Department of Statistics, Central Bank of Jordan, Ministry of Planning, Ministry of Trade and Industry, Investment Promotion Corporation, Amman Financial Market, and the National Information Centre.

the centre. The rift valley of the river Jordan is to the west, which converges at the Dead Sea. The port of Aqaba is in the south, which gives direct access to the Red Sea. Figure 1.1 shows a map of Jordan and the surrounding countries.

The economy is free and market-oriented, where ownership of business entities is largely private, but basically is service dependent. The service sector includes financial, trade, transportation, communication, construction, and education services. It contributes 81% to the Gross Domestic Product (GDP) of the country, and employs two-thirds of the labour force. The remaining 19% is contributed by the agricultural and industrial sectors. According to Central Bank of Jordan (CBJ) statistical Bulletins, the GDP stood at 6.6 Billion US\$ in 1995. The figures for the total exports and imports for 1995 were 1.77 and 3.70 billion US\$ respectively. The growth rate was 6.4%⁵ at constant market prices and inflation rate stood at 2.3% in 1995 but went up to 6.5% during 1996 and down to 2.7% in 1997. The GDP per capita for 1997 was 1435 US\$. The labour force has an approximate total of 1,000,000 and the government estimates the unemployment rate at 20% but unofficial estimates are higher. The last decade witnessed a steady progress to the economy but Jordan still suffers from a debt burden of over 6 billion US\$. This involved the implementation of reform and restructuration programmes under the supervision of the International Monetary Fund (IMF). Table 1.1 gives a summary of relevant details as were given above.

Table 1.1: A Summary of Jordanian Statistics

DESCRIPTION	STATISTIC ⁶
Number of Population	4.6 Million
Population Growth Rate	3.4 %
Geographic Area	96,188 Sq. KM
GDP	6.6 Billion US\$
GDP Growth Rate	6.4 %
Rate of Inflation	2.3 %

* Included Statistics were for 1997 (population) and 1995 published economic figures

⁵ Contrary to the latest 'five year development plan', this figure was as low as 1% for both 1996 and 1997. Those figures were released in September 1998. The first estimates for 1998 put the figure at over 1%.

Jordan's natural resources are scarce, as there are hardly any minerals other than Potash and Phosphates. However, it is an exporter of skilled manpower and expertise to other surrounding countries. Due to lack of socio-economic development, the IS/IT subject has added vitality in Developing Countries such as Jordan. Most of those countries are keen to exploit the potential benefits for increasing productivity, improving organisational effectiveness and enhancing business competitiveness with which the new IT is associated (Avgerou, 1996). Adkin (1988) explained that this was the reason which prompted the increasing interest for assessing the contribution of IT to the development process. Further details about the Jordanian economy and the contexts of the financial organisations are provided in chapter 2.

Explanation of Choice

As can be seen from figure 1.2 and due to the dearth of studies available on countries outside Europe and the US it was a deliberate intention to carry out this research in Jordan. In addition, the researcher had carried out a previous research adopting a positivistic approach (or paradigm), which involved surveying Jordanian public share holding companies (Shannak, 1994). The main conclusion was that the use of MISs did not contribute to the profitability of those organisations. The research had many shortcomings, albeit being able to generalise results based on the criterion of statistical significance. However, it was limited due to an inconclusive instrument that lacked rigour and reliability. This research builds on the previous experience but as will be explicated in the thesis, there was an intentional change to the researcher's methodological perspective.

The fact that the researcher is Jordanian helped, amongst other drivers, to facilitate a relatively free access to organisations. This was especially needed as the first part involved carrying out many in-depth interviews as part of the organisational ethnography⁶ for each of the four organisations. This would probably have not been possible in a foreign country to the researcher.

⁶ Perhaps a more suitable term is an *organography*. This coined term is formally defined in chapter 5 and used throughout the thesis. Based on the work involved in part I of the fieldwork

The selection of the JFOs was for a number of reasons that can be listed as follows:

- 1- The previous research had covered organisations in different sectors. However, the change in the researcher's methodological perspective necessitated researching comparable cases at the first part of the fieldwork. This was possible in the Banks and Finance Companies Sector (BFCS).
- 2- There is a paucity of research involving ISs in Jordanian Organisations. Shannak's (1994) study was shallow in terms of having a rather weak internal validity, and broad in having a strong external validity as the number of surveyed organisations was 53. It was considered more insightful to focus on a certain sector and particular members of the sector. This has more to do with the change to the methodological perspective. Future research can cover other sectors of different industries.
- 3- The choice of JFOs was because of the degree of strategic integration those firms have between the ISs and their own corporate strategies. This shows the highest possible level of technological exploitation and use as compared to individual and support systems (Lucas, 1991). Additionally, the banks were leaders in realising the need for acquiring computers at a very early stage as compared to other organisations.
- 4- The BFCS is well developed and has some of the largest organisations in Jordan. This extends to the number of employees, the paid-up capitals and their total assets. The Jordanian banks have remained mostly local except for the Arab bank with many branches abroad. A few other banks have a limited number of branches outside Jordan.
- 5- The BFCS had an impressive growth over the past three decades with staggering prospects for diversification and expansion. It accounted for 50% of the *entire stock market* capitalisation in 1996 (1.7 Billion JDs⁷ of a total *organised market* value of 3.2 Billion JDs), and now stands at approximately 60%. The

organographies, as will be presented in chapter 7, are particular types of ethnographies that focus on organisations.

⁷ The local currency is the Jordanian Dinar (JD). In March 1999 it was equivalent to 0.85 Sterling Pounds or 1.4 US \$.

contribution to the GDP is over 15%, which demonstrates the vitality of the sector to the national economy.

1.2.2 Area and Topic of Research

According to a series of articles published in the MIS Quarterly by Hamilton and Davis (1981-1991), over most of the 1980s and early 1990s, *the role and contribution of IS* was one of the least researched topics in PhD Dissertations. This result was, to a large extent, seconded by Galliers (1993a) in his search for the most common researched areas in MIS requiring more emphasis. Galliers gave an international perspective as to the key issues identified by senior IT executives. The quoted rankings of 22, 6, and 4 for 'the importance of the issue' were based on findings of British (Parker and Idundun, 1988), Australian (Watson, 1989), and American (Brancheau and Wetherbe, 1987) studies respectively. Brancheau and his collaborators (1996) reported that *Measuring IS effectiveness and Productivity* ranked joint 11 of the key issues (for 1994-1995) to IS executives in the USA. A more recent international study (Watson et al, 1997) reported an overall ranking of 9 to the concern with issue of *IS's role and contribution*. This study compared the findings of recent IS studies in ten nations or regions as well as one US multinational study. It investigated key issues for IS executives in these areas. On the other hand, Badri (1992) reported a rank of 7 for the issue of 'Measuring IS effectiveness and productivity' in the order of importance according to chief executives of IS in the six member countries of the Gulf Cooperation Council (GCC). The countries are Saudi Arabia, UAE, Qatar, Bahrain, Kuwait and Oman.

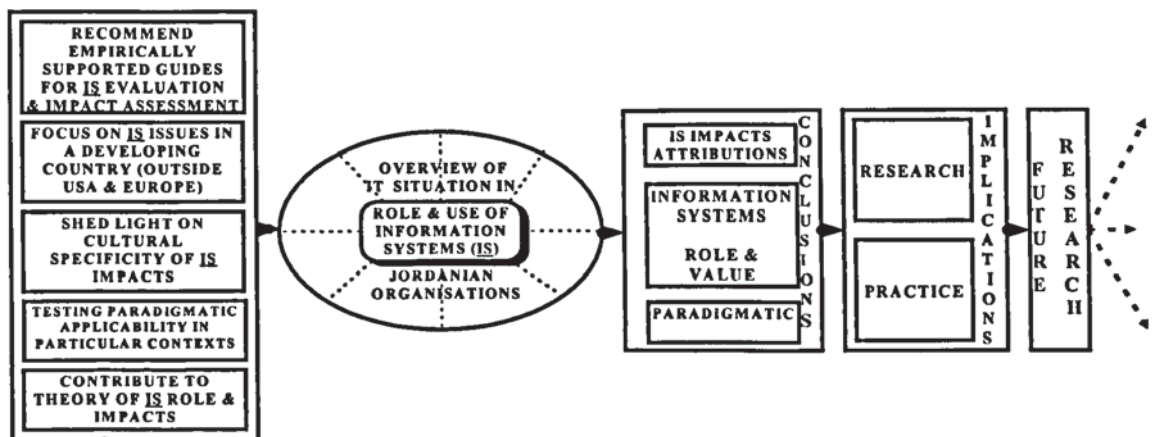
Galliers (1993b) reported that only 2 of a sample of 22 UK Ph.D. students were looking at IS evaluation for the year 1992, although the figure had been zero out of 37 for the previous year. The quoted results for IS in Developing Countries were zero and two for the years 1991 and 1992 respectively. Hamilton and Davis (1992) found out that for the years 1990-1991, only 13 out of a total of 120 American Ph.D. dissertations were looking at the impact of IS/IT. Table 1.2 illustrates a summary of the rankings of issues related to *Role and Value of IS* as were reported in the various articles quoted above.

Table 1.2: Reported Rankings of 'Role and Value of IS' Related Issues

'Role and Value of IS' Issue	Article	Origin	Ranking/Ratio	Remark
Role and Contribution of IS	Parker & Idundun (1988)	Britain	22	IS Executives
Role and Contribution of IS	Watson (1989)	Australia	6	IS Executives
Role and Contribution of IS	Brancheau & Wetherbe (1987)	US	4	IS Executives
Measuring IS Effectiveness and Productivity	Badri (1992)	GCC	7	IS Executives
Measuring IS Effectiveness and Productivity	Brancheau et. al. (1996)	US	1	IS Executives
IS's Role and Contribution	Watson et. al. (1997)	Multinational	9	IS Executives
Impact of IS / IT	Hamilton & Davis (1992)	US	13 / 120	[PhD] 1990 -1991
IS Evaluation	Galliers (1993b)	Britain	0 / 37 2 / 22	[PhD] 1991 1992
IS in Developing Countries	Galliers (1993b)	Britain	0 / 37 2 / 22	[PhD] 1991 1992

The overall aim of this research was to investigate the phenomenon of IS use within the context of Jordanian Financial Organisations. It has the ultimate goal and aspiration of contributing to a more insightful understanding of those corporate assets. Tackling such issues should assist in improving the use of ISs in terms of efficiency and effectiveness. Figure 1.2, depicts the main aims and objectives and the contemplated delivery plan for their accomplishment during the progressive stages of the research.

Figure 1.2: Research Aims and Objectives



The broad objectives of this research are:

- 1- To provide a general overview of the IT situation in Jordanian organisations, rather than ISs as this would need particularistic and in-depth analysis. This is a by-product of the research. Further details are included in chapter 2.
- 2- Tackling the issue of the usefulness of potential applications of the findings. Due to the much-needed contribution of this vital sector being BFCS, to the Jordanian national economy, the thesis provides feedback on findings to those organisations. This includes possible ways of improving the use of their ISs with particular focus on IS evaluation and impact assessment.
- 3- There has been a limited amount of empirical research covering third world countries as most available studies have originated in the developed world. This thesis will contribute as a study originating in a developing country.
- 4- The cultural specificity of IS impacts is also discussed in the light of the empirical work and findings.
- 5- The adopted research methodology is gaining ground (Walsham, 1995a; Nandhakumar and Jones, 1997). The thesis *inter alia*, tackles the issue of the applicability of adopting the interpretive/phenomenological paradigm in researching Third World organisations.
- 6- The thesis is perceived to carry the added advantage of contributing to the ongoing international research work on the value of ISs in Organisations. Additionally, it compares the findings to studies emanating from US and European organisations. This is in concurrence with Benbasat and his collaborators (1987), and also Galliers (1991) in advocating that the research objective should incorporate not only the researched subject but its stage in theory development.

1.3 Research Problem

The problem under investigation is:

What is the role and value of Information Systems in Jordanian Financial Organisations?

The basic contention is that Information Systems are of crucial importance to organisations. In addition, it is argued that the selected research approach plays a vital role in the analysis, and the interpretive/phenomenological paradigm is more suited in this respect, as the value of ISs is manifested by providing mostly intangible benefits. The thesis concludes by explaining that there is, amongst other attributions, a cultural specificity to the resulting impacts of IS utilisation. These are presented in terms of the 'role and value of ISs' as well as the 'determinants' of the impacts of ISs.

In order to satisfactorily solve the research problem, the researcher gathers data about the following *research questions*:

1- *What impacts do Information Systems have in those JFOs?*

2- *To what extent is the variation in the impacts of the ISs accounted for by: more internal processes (cultural and political specific considerations), or more economically or technically rooted factors (microeconomic and/or technical variables)?*

3- *How applicable is the adoption of the interpretive paradigm to researching organisations in a developing country?*

1.4 Overview of Methodology

1.4.1 Preface

The basic premise of the research is that Information Systems are impacting⁸ the work of organisations in many ways. Whether this is generating positive results or not is a contentious issue. Although the history of computers stretches back over half a century, the field of IS/IT is still in its infancy. Many areas in the field are still under-researched and the impacts and value of ISs is but one.

The research so far has had a positive touch, methodologically speaking. Most of the work in the United States was quantitative, focusing on areas that would allow quantification and measurement as the argument was, how could you find

⁸ According to Collins dictionary, 1992 edition, impact means the force with which one thing hits another or to drive or press firmly an object into another. This sounds positivistic. However, it is not the accurate view of the researcher as this word conveys the essence of the technological imperative (Markus and Robey, 1988). This term is adopted because it is more common and frequently spoken in daily life. However, it is used loosely and implies the *resultant soft influence or effect*. Orlikowski and Robey (1991) explained that considering 'impact' as a metaphor and computers as discrete objects capable of colliding, will ultimately lead to realising the presumed impact as conjectured by Kling (1987).

out if something has an impact without measuring the corollary or resulting effect. This is plausible but facts are not just numbers. In addition, improving things is not solely assessed in terms of how profitable they are. The other problem with much of the previous research is the focus on the technical side of evaluating IS/IT in organisations. This is an essential part but follows a deterministic path rendering the assessment incomplete.

The area of IS/IT impacts is wide and covers investments in IS/IT and also the evaluation of those systems. From an economic viewpoint, organisations are interested in returns or carrying out a cost/benefit analysis, but from a social perspective they should be more appreciative of an emphasis on human aspects of use and the impacts of such systems. After all, the socially accepted aim and objective, by many, is more inclined to improving human living for all and not increasing the wealth of a selected few.

1.4.2 The Methodological Perspective and Paradigm Selection

The preceding preface was given to stress that Information Systems are social systems (or *holons* to use Checkland's (1991) suggested term for the *abstract notion of the whole*), which have economic, technical, and social impacts. A constant reminder is needed that ISs do not function independently and have no self-perpetuating cybernetic control. The use of such systems is a social phenomenon which has to be investigated in particular settings. They are embedded within social systems (Walsham et al, 1988). There is a web surrounding ISs which holds the supporting infrastructural resources and embraces social interactions within the social, historical, and political contexts in which they are developed and used (Kling and Scacchi, 1982; Kling, 1987). Assuming causality in terms of relationships created by and resulting from the use of ISs is inaccurate and unrealistic. The *ceteris paribus* status, where some influencing factors are neutralised, is untenable because neutralisation, in practice, can never be absolute. Additionally, our understanding of constructs and concepts is not yet sufficient to be able to manage operationalisation for the sake of performing exact measurements.

This perception of ISs and the role they play in organisations mandates a methodology that considers contextual analysis as central to unveiling the complexities surrounding the phenomenon by means of an induction process. The research therefore adopts the *interpretive/phenomenological* paradigm. This calls for an understanding of the researched phenomenon and the interpretations of the meanings within the social context of the natural setting. Geertz (1973) argued the necessity for rich understanding of the context of the researched phenomenon in order to draw a 'thick description' of its characteristics and complexities.

The selected methodological approach is that of *organisational ethnography*. Giddens (1991) has the view that regardless how mathematical or quantitative social research is, it presumes ethnography. Traditionally, ethnographic research would be used to study culture. The research does deal with the cultural specificity of the impacts of ISs. However, this is not an anthropological exercise adhering to the standard characteristics of this approach. Nevertheless, it does identify with some of the features of ethnography as a social research that were, for instance, proposed by Hammersley (1990). As an example, data were gathered from a range of sources and the process of data collection was mostly unstructured. For the features related to analysis of the data, Hammersley suggests that this should involve interpretations of the meanings and functions of human actions by verbal descriptions and explanations. He places little emphasis on quantification and statistical analysis. The research approach used here does have this latter feature which is in compliance with the adopted paradigm.

Two research methods are used, namely *multiple case study fieldwork* and a *survey*. Yin (1984; 1989; 1993)⁹ has defined a case study as an empirical inquiry that 'investigates a contemporary phenomenon within its real-life context, addresses a situation in which boundaries between phenomenon and context are not clearly

⁹ Throughout the thesis, reference is made to different editions of Yin's same book namely '*Case Study Research: Design and Methods*' due to a slight discrepancy in the coverage amongst the different versions. The first edition came out in 1984, revised in 1989 and the second edition followed in 1994. Yin's 1993 book was titled '*The Applications of Case Study Research*'.

evident, and uses multiple sources of evidence'. Hammersley and Yin share a similar understanding of how qualitative research might be carried out but they term it differently. To Yin, it is a case study, but to Hammersley it is ethnography. In this thesis and as alluded to previously, an ethnographic methodological approach is used which is executed by using case studies. This has a sounder philosophical basis. Elaboration on this is provided in greater detail in chapter 5, which presents a clearer explication of the methodological perspective. This extends to include the philosophical underpinnings, researcher's role, paradigm adoption, methodological approach, research methods, data collection instruments and data analysis techniques. Further theoretical coverage of the interpretive analysis is also given in chapter 5.

Four JFOs were researched in the first instance. A large number of interviews were carried out in each case and a series of analyses were performed prior to engaging in the second part of the research. This was a survey of 16 JFOs and involved the distribution of three different questionnaires to senior managers, MIS/computer managers and managerial users in those organisations. An aggregate analysis was done upon completion of the empirical work.

Concurring with Lincoln and Guba (1985: p. 39), the researcher was the primary instrument for data collection, and regardless of imperfections, 'the human instrument is capable of grasping and evaluating the meaning of that differential interaction'. This does meet the requirements of the chosen interpretive/phenomenological paradigm. Other instruments, such as interviews, questionnaires, document analysis, and non-participant observation, were also used.

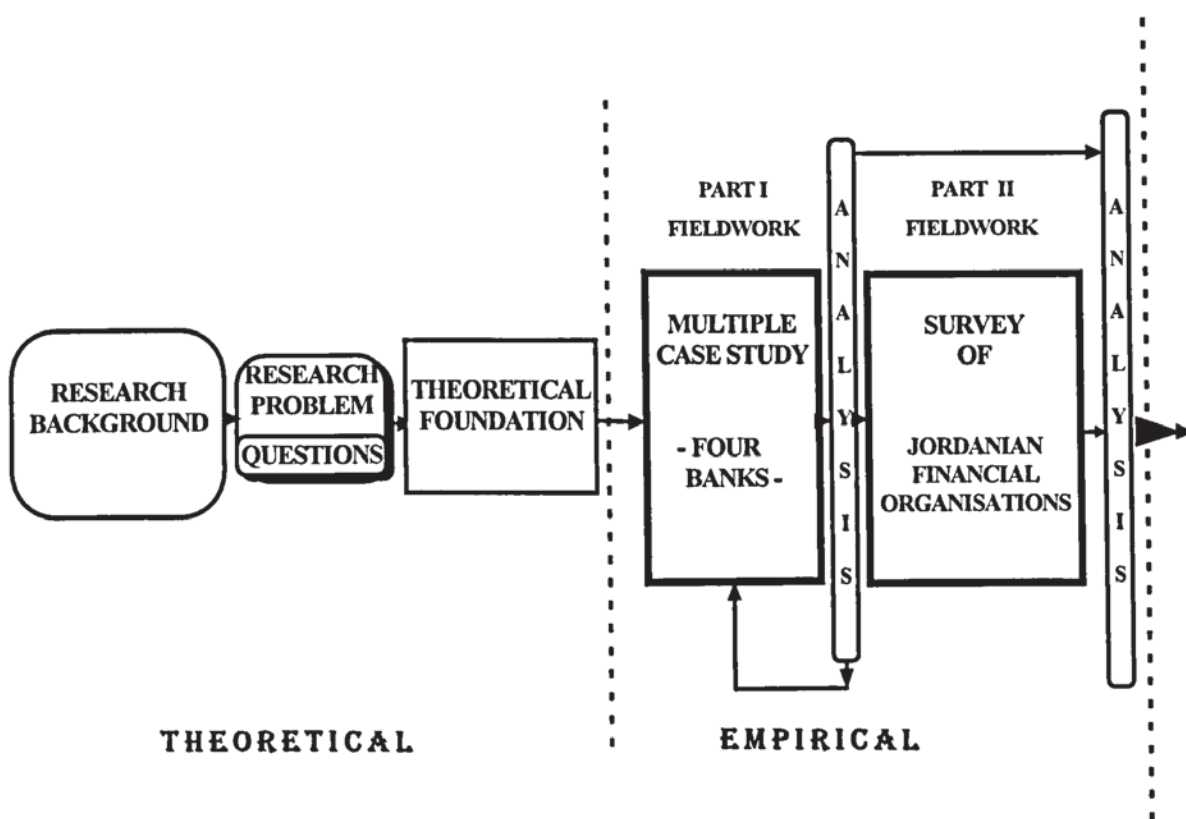
Analysing data was by means of interpretive/hermeneutic techniques. The given description constitutes an interpretive reading of events and actions. Walsham and Waema (1994: p. 151) state that:

'an interpretive analysis is an induction, guided and couched within a theoretical framework, from the concrete case situation to the social totality beyond the individual case.'

The analysis consisted, as recommended by Miles and Huberman (1994), of three concurrent flows of activities: data reduction, including the translation of data from Arabic to English; data display; and conclusion drawing/verification.

The following figure 1.3, shows the research procedural stages. Further elucidation and extensive discussion is included in chapters 5 and 6.

Figure 1.3: Research Procedural Stages



1.5 Research Assumptions and Delimitations¹⁰

This section is included in order to build a boundary around the planned and justified scope of the thesis beyond which generalisation is not intended.

¹⁰ These are generally taken to imply the limitations, which were within the researcher's control. Other uncontrollable limitations are covered in chapter 10. The researcher subscribes to Creswell's (1994: p. 110) view which proposed the use of delimitations for narrowing the scope of the study and limitations for identifying its potential weaknesses.

Heeding the diagnosis of past research problems by Bjørn-Andersen et al (1986), they are used here, in addition to other considerations, to point out the assumptions and delimitations of the research as follows:

1- Technological determinism is utterly inappropriate as there are many forms that systems can take and because different people use technology differently. Technology is not an exogenous form determining or strongly constraining the behaviour of individual and organisations (Markus and Robey, 1988). It embodies essential characteristics, which will change the nature of work of organisations and their employees. It is one of the important ingredients in the change process (Robey, 1991). The technology *informatizes* by *making activities, events, and objects visible*, as well as *automating* work (Zuboff, 1988). The consequential inevitability for the social system (the organisation) that uses a particular form of technology should not be pre-assumed. Bijker developed his Social Construction Of Technology theory which propounds that technological artefacts have *interpretive flexibility* as its basic premise. This entails that the usability and workability of an artefact depend on the user's *technological frame*, as much as on how it is used. In addition, technology is *multidimensional* and may assume more than one basic form (Bijker, 1987; Bijker, 1995). This research does not advocate a technological deterministic tenet.

2- Analyses consider the broad organisational implications and consequences of the use of ISs. The orientation is not only micro focusing on sub-units or the individual level.

3- 'The influence of intervening and contextual variables'. Some organisational variables are influenced by the corporate IS which, in turn, brings about their subsequent effect on other corporate performance dimensions. Task variables and power are but some examples. In addition, the environment and size of organisation influence the kind of impact IS might have, although not directly affected by IS. Pettigrew (1985b; 1990), basing an argument on Pepper's description of contextualism (Pepper, 1942) and Payne's interpretation of Pepper's ideas (Payne 1975; 1982), has submitted that it is the preferred theory of method for researching change in organisations. Analysing effects or impacts should, therefore, be done collectively or on the aggregate level.

4- The thesis also disassociates itself from the organisational imperative stance whereby it is assumed that the organisation has unlimited control over technological options and the consequences (Markus and Robey, 1988). The degree of control is not absolute, as there is always the unintended or the unexpected consequence.

5- Emphasising the importance of the reciprocity between the IS meeting its effectiveness objectives and the implication this has for assessing the resulting impact.

6- There is the problem of not having a consistent terminology in the IS field in general, and for studying IS impacts in particular. This thesis does not depend on pre-defined terms requiring operationalising. The consistency, perhaps, stems from basing the work on previous research work that had adopted a similar research perspective. It was considered crucial not to lead respondents by giving them the researcher's own definition of IS, for example, as compared to interpreting how they had perceived the IS as members of *relevant social groups*. Upon reaching *stabilisation* of the IS as the core artefact, the *interpretive flexibility* is significantly reduced. Therefore, the difference in the intra-group understanding of the artefact becomes marginal.

7- Information Systems are social systems, and so are organisations. ISs can not conclusively be studied out of the context where the phenomenon of the use of IS occurs. The focus is on presenting a context-based, process-oriented explanation of the phenomenon, rather than causal and objective statistical description (Boland, 1979, 1985; Chua, 1986; Orlikowski, 1993; Orlikowski and Baroudi, 1991). The thesis adopts the emergent perspective, which, according to Markus and Robey (1988) 'holds that the uses and consequences of information technology emerge unpredictably from complex social interactions'. Their views were built upon the work of Pfeffer (1982) and compared their *technological perspective* with Pfeffer's *situational control*, their *organisational perspective* with Pfeffer's *intendedly rational*, and their *emergent perspective* with Pfeffer's *emergent*.

8- The inception of ISs has corollary effects which appear directly or as a result following some delay. Therefore, the change due to the introduction of ISs has to

be looked at after some time has elapsed as the effects or impacts are processual and not necessarily spontaneous.

9- Organisations are collectively represented by their employees who act as their knowledge repositories or interpretive repertoires (Potter and Wetherell, 1987).

10- Organisations were selected in Jordan, which is a third world developing country, in accordance with the research aims and objective of researching organisations outside the Western Hemisphere. Generalisation is not planned except for providing a picture about Jordanian organisations.

11- Only Public Share-Holding firms were selected in the sector of choice because they are Jordanian based and managed. The thesis looks at the culture specificity of the impacts of ISs. This meant inspecting corporate culture under the direct influence of the Jordanian national culture. Fuller explanation is included in chapters 5 and 6. There is also an elucidation of the reason for the choice of the four case studies. Besides, the excluded banks included 6 foreign subsidiaries, which were mostly small in comparison to the other public share-holding banks.

12- The unit of analysis is the organisation. However, organisations are made up of different elements and most importantly, the human individual. The impact on the individual is not the main goal *per se* but a means to studying the collective impact of ISs on those organisations. The influence of ISs is studied on multiple levels (of individuals) as used by Orlikowski (1988), based on the recommendations of other researchers (Danziger, 1985; Bikson et al, 1985). There is a necessity to slice vertically through the organisation, and obtain data from multiple levels and perspectives (Leonard-Barton, 1990).

1.6 Thesis Outline

The thesis is divided into four main parts, as can be seen from figure 1.4. Part I comprises this chapter, covering the background and summary of the research, as well as chapter 2 which provides an overview of the Jordanian contexts of the financial organisations and the IS/IT market. Part II comprises two chapters and presents a review of the literature. Chapter 3 discusses the conceptual and methodological foundations to researching organisations and corporate

information systems while chapter 4 focuses on the role and value of corporate information systems.

Figure 1.4: Structure of Thesis

Part I [Background and Summary]			
<u>Chapter One</u> INTRODUCTION	<u>Chapter Two</u> AN OVERVIEW OF THE JORDANIAN CONTEXTS: FINANCIAL ORGANISATIONS AND IS/IT MARKET		
Part II [Literature Review]			
<u>Chapter Three</u> UNDERSTANDING ORGANISATIONS AND CORPORATE INFORMATION SYSTEMS		<u>Chapter Four</u> ROLE AND VALUE OF CORPORATE INFORMATION SYSTEMS	
Part III [Researcher's Methodology]			
<u>Chapter Five</u> THEORETICAL DESIGN	<u>Chapter Six</u> DATA COLLECTION DESIGN	<u>Chapter Seven</u> DATA ANALYSIS: FOUR ORGANOGRAPHIES	<u>Chapter Eight</u> DATA ANALYSIS: A SECTOGRAPHY OF THE JORDANIAN BFCs
Part IV [Research Discussion and Conclusions]			
<u>Chapter Nine</u> DISCUSSION AND SUMMARY OF FINDINGS		<u>Chapter Ten</u> CONCLUSIONS	
[References and Appendices]			
LIST OF REFERENCES		APPENDICES [I, II, III]	

Part III deals with the researcher's methodology. Chapter 5 introduces the theoretical foundation and *rockbed*¹¹ by explaining the organisational and analytical frameworks and the theoretical basis of the research. It proceeds further to explicate and lay down the research methodological perspective which covers, amongst other constituents, the used research methods of case study and survey. Chapter 6 explains the data collection design and the coverage extends to discussing stages of research and other details related to primary and secondary data collection.

¹¹ The term '*rockbed*' may imply a solid basis. However, in line with the philosophical underpinnings of the research, it should be taken to signify a perforated and elastic structure. Its holes are filled upon arriving at findings and discoveries from fieldwork.

Chapter 7 contains a description of four organographies (JFOs), with the aid of the research's analytical framework. This is further clarified with additional reference to the research's organisational framework as used to form a vivid picture of those organisations. Using the same analytical framework, Chapter 8 presents the analysis of the survey of part II of the fieldwork in the form of a sectography of the Jordanian BFCS.

Part IV provides the discussion and conclusion, with the inclusion of the findings and contribution of the research. Chapter 9 presents the discussion of the research, based on the details presented in chapters 7 and 8, and provides a summary of the key findings. Finally, Chapter 10 outlines the contribution and presents the limitations that have become apparent during the progress of the research as well as providing some ideas for future research. A list of references and appendices is included after the four main parts.

1.7 Summary

This introductory chapter has formed the base for the thesis. The research problem and questions have been introduced. The justification for the research has been given and the objectives highlighted. In addition, there was a brief description of the methodology and an outline of the thesis. The controllable limitations of the research and its assumptions were also stated.

Chapter 2 moves on to provide further background information about the Jordanian contexts of the banking system and the IS/IT market.

Chapter Two

AN OVERVIEW OF THE JORDANIAN CONTEXTS: FINANCIAL ORGANISATIONS AND IS/IT MARKET

2.1 Introduction

Some details were presented in sub-section 1.2.1 of chapter 1 for the purpose of introducing Jordan as the country where the fieldwork took place, and also for discussing the choice of the Jordanian financial organisations. Those details included economic figures such as GDP and economic growth. This chapter provides further coverage that, albeit considered useful, was not included earlier so as not to congest the introductory chapter and ultimately obstruct the systematic flow of the presentation of the thesis. The coverage extends to the cultural reference, economy and trade, the banking system and the IS/IT market.

2.2 Cultural Reference

Jordan is a small country with very few natural resources. Approximately 10 % of the land is arable and this is subject to the vagaries of the limited water supply. As a country, it is quite young. Originally known as Trans-Jordan and later on as the Hashemite Kingdom of Jordan. It became an independent State in 1946 and is a monarchy. It has an Arab culture influenced by Islamic values and Arabic is the official language.

Hill et al (1998: p. 31) stated that 'without a doubt, the literature portrays Islam as the dominant characteristic of Arab culture and society'. This truism clearly informs, to a large extent, ways of living and corporate cultures of organisations that operate within the particular Jordanian cultural framework. In practice, one notices that only a proportion of the Arab cultural aspects can be attributed to Islam.

The following discussion adopts Hofstede's (1980; 1983) dimensions for the purpose of shedding light on the Jordanian national culture (based on theoretical extrapolation of expected estimates rather than empirically supported findings).

Hofstede and the Dimensions of National Cultures

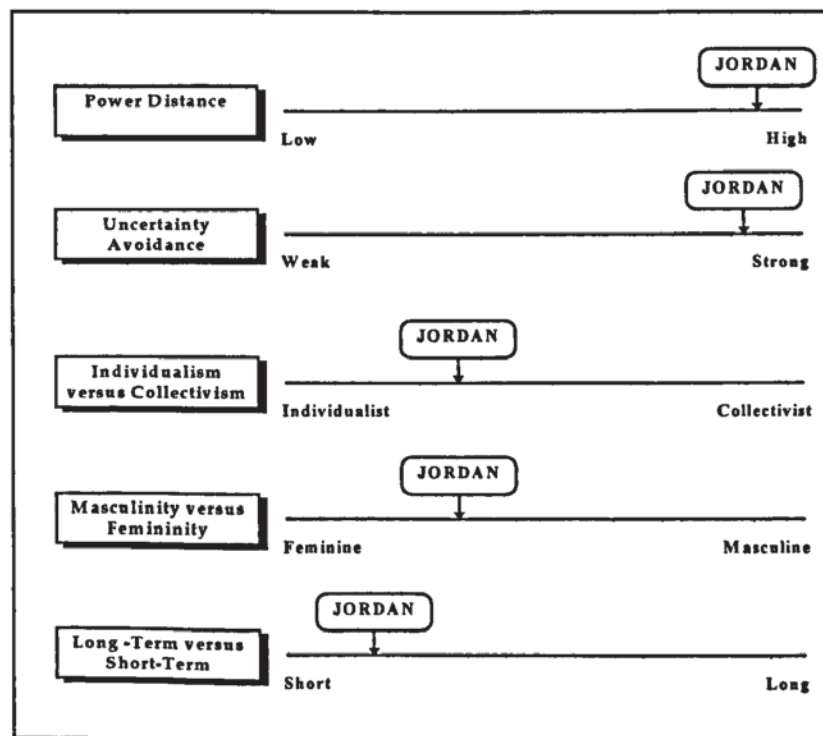
Hofstede carried out a large research project which involved distributing 116,000 questionnaires in 50 countries and 3 regions at 2 points in time. He came up with four dimensions to explain some of the variance in the responses which were labelled power distance, uncertainty avoidance, individualism versus collectivism and masculinity versus femininity. A fifth dimension was added later when some Chinese scholars designed the research instrument (Hofstede and Bond, 1988). This was originally called 'Confucian Dynamism' but later renamed by Hofstede (1991) as 'long-term versus short-term orientation'.

In order to be able to position the Jordanian national culture on the spectrums of those five dimensions, brief definitions of those dimensions (based on Hofstede's explanation) are given as follows:

- 1- Power Distance: The degree of inequality among people which the population of a country considers as normal.
- 2- Uncertainty Avoidance: The degree to which people in a country prefer structured over unstructured situations.
- 3- Individualism versus Collectivism: The degree to which people in a country prefer to act as individuals rather than as members of groups.
- 4- Masculinity versus Femininity: The degree to which values like assertiveness, performance, success and competition, which are normally associated with the role of men, prevail over values typically associated with the role of women like quality of life, maintaining personal relationships, service, care of the weak and solidarity.
- 5- Long-term versus Short-term Orientation: The degree to which people in a country are oriented towards long term (futuristic) values like thrift or saving and perseverance or short term (past and present) values like respect for tradition and fulfilling social obligations.

It is worth pointing to the fact that Hofstede's list of countries and regions included only one group of seven Arab countries (which had an IBM office at the second time as they were not included in the initial research) and Jordan was not one of them. As for the Arab region, Hofstede found that their scores were 80 for power distance, 68 for uncertainty avoidance, 38 for individualism versus collectivism and 53 for masculinity versus femininity. This implied that Arab nationals in organisations researched accept inequality as a fact where the powerful have privileges to making autocratic or paternalistically persuasive decisions and the subordinates are afraid to disagree with their superiors. The nationals of those countries studied preferred structured situations and were rather collectivist. Hofstede found that Arab countries were balanced between masculinity versus femininity which meant they cared about social ties and solidarity but at the same time had a degree of assertiveness and purposefulness. In general, researchers delineated a number of features that are associated with the Arab culture which include social diversity, hierarchical class structure and patriarchal relations (Barakat, 1993).

Figure 2.1: Jordanian National Culture on the Cultural Spectrums



Without committing oneself to actual figures for those dimensions, the researcher reckons that a theoretical extrapolation would place Jordan on the spectrums of those dimensions as illustrated in Figure 2.1. These assumptions need to be tested in actual empirical research related to the Jordanian national culture.

The preceding figure 2.1 contained a number of implications for the Jordanian national culture which can be explained in the following points by intermarrying the cultural dimensions with Al-Faleh's (1987) observations on Arab culture in general:

- 1- The power distance is extremely high indicating a large degree of normality in the societal acceptability of social inequality. This implies an acceptance by the people that seniority outweighs ability and performance in importance. Subordinates accept that decision making is a prerogative of the top management. Decision making is therefore pushed upwards in the hierarchy. Subordinates also accept formal structure and act with deference and obedience with little opposition or resistance.
- 2- The uncertainty avoidance is also high because people prefer to deal with structured situations. There is too much political and economic instability to be able to predict what is going to happen and the preference, in managerial terms, is strong for a person-oriented rather than task-oriented approach. Noticeably, there is constant change and high levels of uncertainty. The culture does not encourage innovation and risk taking and subordinates fear to be punished rather than rewarded for such activities.
- 3- The degree of individualism is large. This means that team working possibilities are limited and not commonplace. Generally, managers rely on familial and friendship connections to get things done. Nepotism is regarded as natural and acceptable. This is within organisations or within the society at large.
- 4- The Jordanian culture is inclined to have feminine influence in terms of focusing more on enhancing personal relationships and solidarity rather than pushing for assertiveness and performance improvement. For example, punctuality and time awareness are less important than in the Western cultures. In addition, the culture encourages an open-door tradition between people which

has its cons and pros. One could argue that this is ideal for practising management by wandering around but on the other hand it can be chaotic and therefore an obstacle to getting work done.

5- Planning is short term rather than long term. People tend to be reactive and crisis-oriented rather than proactive and well prepared for contingencies in advance. It is a general tendency to focus on fulfilling social obligations and respecting traditions rather than encouraging perseverance and futuristic flourishment and prosperity.

2.3 Jordanian Economy and Trade

Jordan has a young and active society with a workforce of approximately 1,000,000 people¹. This is relatively large for a developing country, as it approximately constitutes about 22 % of the total number of population. The woman's participation in the economy is on the increase. Jordan has a good reserve of well-experienced technical and professional individuals.

As a developing country with less diversified economy, it is one of those emerging markets that has a clear understanding of the challenges posed due to embracing globalisation and liberalisation of its economy (Smadi, 1997)². The economy has suffered fiscal and monetary disorders with much dependence on foreign aid. The burden of debt is continuing to cause major economic difficulties especially with the low per capita income and the rising unemployment. This was especially problematic when the Arab aid had ceased after the Gulf crisis. However, during the last decade, Jordan's economy has been making progress under IMF supervised restructuring programmes.

Jordan has been negotiating its status within the World Trade Organisation (WTO) for the past few years. The objective was to move from an observer to a

¹ A study by the ministry of finance estimated the number for 1996 at 1,010,000 (this included non-Jordanian workers). The figure for the number of employees in the public sector (including ministries, general public directorates, public establishments, public universities, and the military forces) was 350,000. [Al-Ra'i Daily Newspaper (in Arabic), 11/09/96].

² The presentation of the economic coverage depended on details obtained from multiple sources. The Ministry of Trade and Industry was one of those sources and Dr. Mohammad Smadi was a high-ranking officer in the Ministry at the time.

full member status. In the mean time, Jordan has established a partnership agreement with the European Union (EU) which will help meet the obligation and commitments set out by the WTO. This will facilitate international trading by reaching more markets. Tables 2.1 shows Jordan's total foreign trade, trade with the EU and trade with the Arab World, for the period 1993 to 1996. The table is included to give an impression of how small is the size of Jordanian economy as indicated by the trading balances.

Table 2.1: Jordan's Trade (in Millions of JDs)

	Deficit	Imports	Exports	Year
Total Foreign Trade	1,588.9	2,453.6	864.7	1993
	1,367.4	2,362.6	995.2	1994
	1,349.5	2,590.6	1,241.1	1995
	1,755.4	3,043.6	1,288.2	1996
Trade with the European Union	786.1	814.3	28.2	1993
	797.3	838.1	40.8	1994
	774.6	837.6	63.0	1995
	877.4	963.6	86.2	1996
Trade with the Arab World	221.2	500.2	279.0	1993
	183.6	524.4	340.8	1994
	154.2	609.0	454.8	1995
	271.2	762.4	491.2	1996

Parallel to this, there is an ongoing process to progress on the Arab World front. Jordan has a number of bilateral agreements with some of the Arab Countries and has signed a multi-lateral Arab free trade agreement that calls for an annual 10 % reduction in tariff for the next 10 years. By the end of this period, the Arab World will have a full free trade agreement which will help create more opportunities for Jordanian companies.

It has been a policy of the Jordanian government, with all its development plans in the past two decades, to enhance the role of the private sector. In addition, Jordan aimed to stabilise structural reforms by the reduction of the fiscal deficit

to GDP ratio and maintaining a low inflation rate. This meant a continuous policy drive on the macro and microeconomic levels.

For a small country like Jordan, the big issue is how to make use of the scarce resources in order to achieve the economic objectives. In realising the need for producing quality products an increasing number of Jordanian companies are acquiring the total quality management international certification (ISO 9000).

2.4 Jordanian Banking System

The Jordanian Banking System comprises of the Central Bank, on top of the pyramid, and a number of banking and financial organisations below that.

2.4.1 The Central Bank of Jordan

The CBJ controls and monitors all banks in Jordan in accordance with the Banking Act number 24 of 1971. It has the ultimate authority on the control of capital and credit markets in Jordan. The CBJ was originally established in 1964 under a special law legislated in the year 1959. It periodically updates regulations of retail and commercial banking in order to protect the interests of the public by ensuring a free banking system devoid of currency speculation.

During 1995 the CBJ requested that all banks should raise their capital to 20 Million JDs before December 1997 and the banks have met this condition. This was part of a plan of reorganising the sector for the purpose of instituting strict capital sufficiency in line with the international standards. The CBJ suggested resorting to increasing the number of shares, recapitalising some of the reserves or merging with another bank.

Table 2.2: Jordanian Banks and Financial Companies

No	Name	Type	In-Bran	Offices	Out-Bran	NoEmp	Capital
1	Arab Bank PLC	Com	30	51	62	4404	88
2	Jordan National Bank	Com	48	6	10	1300	42
3	Bank of Jordan	Com	37	25	5	1234	20
4	Cairo Amman Bank	Com	23	15	16	1301	20
5	Jordan Kuwait Bank	Com	21	5	1	618	20
6	Jordan Gulf Bank	Com	27	2	2	668	20
7	Arab Banking Corporation	Com	15	2	-	296	20
8	Industrial Development Bank	Spe	4	-	-	186	24
9	The Housing Bank	Spe	113	7	2	2206	100
10	Beit Al-Mal Saving and Investment for Housing	Finco	6	-	-	60	2
11	Jordan Islamic Banks	Isl	33	4	-	1030	20
12	Arab Jordan Investment Bank	Inv	8	7	1	286	20
13	Jordan Investment and Finance Bank	Inv	4	-	-	99	20
14	Union Bank for Saving and Investment	Inv	12	3	1	303	20
15	Philadelphia Investment Bank	Inv	6	1	-	121	23.5
16	Middle East Investment Bank	Inv	19	2	-	205	20

- 1 Capital in Millions of Jordanian Dinars.
- 2 There are four types of banks according to the Central Bank of Jordan (CBJ)'s classification. These are Com: Commercial, Inv: Investment, Isl: Islamic, Spe Specialised, and Finco: Financial companies.
- 3 key for table is as follows:
 In-Branch : Number of Jordanian branches.
 Out-Branch: Number of Non-Jordanian branches
 Offices: Number of Offices (similar to a branch but with limited lending facilities according to CBJ's regulations).
 NoEmp: Number of employees.

2.4.2 Banks and Financial Companies Sector

In addition to the population of the research, as shown in table 2.2, the following list details other Jordanian financial organisations that belong to the sector but were excluded from the population of the research (further explanation is provided in chapter 6):

- 1- The Jordanian Export Bank.
- 2- Non-Jordanian banks. Details related to these banks are shown in table 2.3.

Table 2.3: Foreign Banks in Jordan

Name	Year Established	Branches	Offices
The British Bank of the Middle East	1949	5	0
Arab Land Bank	1951	19	0
Rafidain Bank	1957	3	1
ANZ Grindlays Bank	1969	14	0
Citibank	1974	2	0

3- Governmental owned Corporations. These are:

A - Agricultural Credit Corporation.

B - Cities and Villages Development Bank.

C - General Establishment for Housing and Urban Development.

4- Jointly owned organisations according to CBJ classification. The only one under this category is 'Jordan co-operative organisation'.

5- Representative offices. These are small and serve co-ordination purposes for their foreign headquarters. Those two offices are:

A - The general Representative office of Credit Lyonnais for the Middle East.

B - Société General representative office.

6- Money Exchangers. These are small offices that deal in foreign currency exchange and limited transfers. They are not related to any bank in Jordan or outside.

The sector is among the fastest growing and developing in Jordan. It comprises one financial company for saving and lending, specialised lending establishments and 21 Jordanian banks and five foreign banks. Table 2.3³ shows some useful details about those foreign banks in Jordan. As for Jordanian banks, they remained local in nature although few have foreign branches. The trend of banks' expansion is still underway. The Arab bank stands out as the only bank that has a large number of international branches (62) but it is much bigger than the other Jordanian banks and belongs to the Arab Bank Group.

³ Data for tables 2.2 and 2.3 are based on details included in the CBJ 1996 annual report.

The BFCS is relatively small in comparison with similar sectors in other countries. This may be understandable in the light of realising the smallness of the country itself by a number of measures. The total assets of the licensed banks, as shown in CBJ's sheet of the consolidated balance for April 1997, was approximately 9 Billion JDs (US\$ 12.7). According to the Association of Banks in Jordan, the total number of employees in this sector stood below 14000 by the end of 1998. The size of the sector is clearly identified as small when compared with the approximate total individual assets figures of other Arab banks like the 11 Billion US \$ for the Saudi American Bank, the 9 Billion US \$ for the National Bank of Bahrain, the 14 Billion US \$ for the National Bank of Egypt or the 14 Billion US \$ for the National Bank of Kuwait⁴.

The performance of the Jordanian Banking System has witnessed a continuous growth between 1964 and 1985. Soon after that Jordan faced a recession that affected all sectors including the BFCS. One of the Jordanian banks collapsed in 1989 and this was followed by a local currency (JD) devaluation when the JD lost half its value and consequently the economic problems were exacerbated. The actual period of recuperation started in the early 1990s. The economy began to rebound in 1992. In 1993, the BFCS saw a number of mergers amongst financial companies and also between financial companies and banks. In addition, there have been noticeable developments in the BFCS with large growth in banks' aggregate total of assets. As mentioned in chapter 1, the BFCS accounted for approximately 50 % of the stock market capitalisation. This is quite remarkable if compared to the percentages of the other sectors⁵.

⁴ Figures for Arab banks were obtained from the Business and Industry Magazine (Cyprus), Aug - Sept. 1996, Vol. 5, pp. 22- 53.

⁵ The industrial sector accounts for almost 40 %, 8 % for the service sector and the insurance sector accounts for approximately 2 % of the total stock market capitalisation. In addition, a rough estimate puts the contribution of the BFCS to the GDP at 15 %. The service sector (financial services, trade, transportation, communication, construction and education) contributes 81 % of the GDP, while the remaining 19 % is attributed to the agricultural and industrial sectors. [Note: The AFM divides companies into four sectors namely BFCS, Service, Insurance and Industry (for market capitalisation percentages) while the CBJ classification is used for referring to the other sectors.

Although wide ranges of achievements have been made by the BFCS in the past years, the challenge is still ahead. Akel (1997)⁶ explained that the most prominent challenges faced by Jordanian banks are:

- 1- Establishing new positions and set ups in line with the liberalisation of the economy.
- 2- Improving profitability by varying investments and accumulating professional experience to account for and manage arising risks.
- 3- Integrating with the international market in terms of products and services.

Akel suggested that Jordanian banks have taken measures to meet those challenges. The measures include, amongst other factors, increasing investments in communication and information technology.

2.5 IS/IT Market

Monk (1987: p. 164) argued that IT provides

‘the means of radically improving and expanding opportunities for wealth creation, and thus social welfare’.

Monk's statement is general and abstractive which needs reification in order to be able to fathom the consequences of the use of IT. This can be understood in the light of the great advances that have occurred over the past two decades and the potential for the resulting applications that make use of those technological advances (increased computing power, telecommunications, networking and software capabilities). The consequence is a transformation driven by the force of information technology; an industry that in itself is a 'Whirlwind of change' (FT, 03/03/99). Walsham (1989) used the analogy of the car that uses an engine to move in any direction under the control and guidance of the human being and likened this to the use of IT in the transformation process. Furthermore, the transformation is also a general term which could be taken to mean a progressive positive change to the work of the individual or the organisation. This change can be on the surface or rather radical in nature. Whether in the capacity of an

⁶ Akel is a known Jordanian banker who is one of the experts in his area. His article was originally submitted to the 'Regional Investment Conference' that took place in London - UK.

individual or an organisation, both contribute to the welfare of nations. Individuals work in organisations that play important roles in advancing the economic growth. Therefore, the researcher concurs with Monk in considering that IT can help in driving a transformation that will work to create wealth which in turn causes an improvement to the social welfare of nations.

Similar to Monk's contention, Mohan et al (1990) explained that IT is a key resource especially for developing nations which should be exploited if those nations are to be more competitive in today's dynamic world economy. Jordan is one developing country that could really benefit from IT-enabled transformation. An observer to the Jordanian situation will notice the abrupt *creeping in* signs of the advent of the information revolution in Jordan without going through the phase of full industrialisation. It is a change to post-industrialisation with the full realisation of the cruciality of the information resource to the development. There has been growth in the use of IT. This was encouraged by the decrease in prices of hardware. The Internet is becoming in wide use and there is a continuous improvement to IT infrastructure.

Notwithstanding, Jordan shares some of the common problems related to IT and its applications as explained by Walsham (1989). For example, the prices of IT equipment are relatively higher than the international averages, especially if we consider the Jordanian standard of living. Similar to most developing countries, Jordan has an underdeveloped IT infrastructure. However, there is no lack of IT personnel or rather, on the contrary, some of the Jordanian IT professional are expatriates in the Arabian Gulf Countries.

Computers were introduced to Jordan in the early 1960s. The few available systems were in public departments such as the department of statistics. As for the private sector, the first computer was installed in the Arab bank during the 1960s. This has changed during the 1970s and by the end of the decade, computer applications with high information content were being produced. The growth

continued throughout the 1980s and 1990s but has not reached a stage of maturity yet as compared to other developed countries that are similar in size.

Nusier (1993) summarised the Jordanian situation of 'information' in the following points:

- 1- A considerable progress over the past few years in terms of information resources and skilled workers.
- 2- High level of information awareness and its usefulness for decision making and research and development.
- 3- Information centres depended on the efforts of individuals without much co-ordination.
- 4- Lack of national standards and limited infrastructural preparation for future use (e.g. problems with telephone lines: Estimated number of telephone subscribers in Jordan was 404300 in 1997 which rates 88 per 1000 Jordanians).

The modernisation of existing ISs is continuing in Jordanian organisations in general and banks in particular. A large number of competing banks, a growing economy and the expansion of the economy were main factors which necessitated having an advanced corporate ISs in those JFOs.

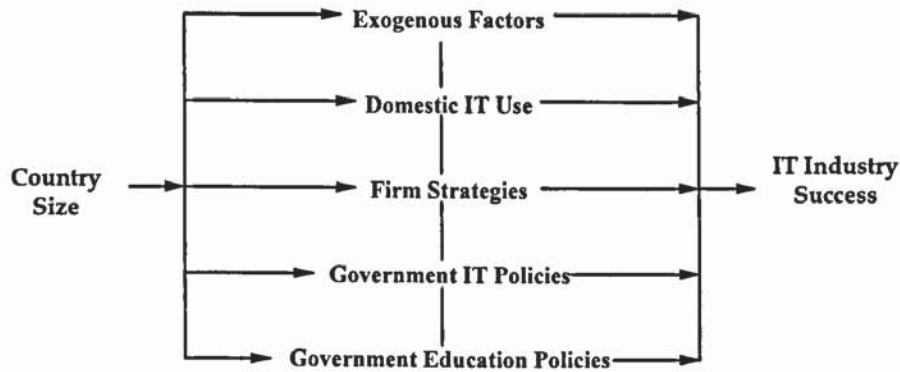
The following description uses a framework devised by Ein-Dor et al (1997)⁷ for understanding the dynamics of the development of IT on the level of the industry. Four variable groups were used namely controlled variables, dependent variables, exogenous variables and endogenous mediating factors. Figure 2.2 graphically illustrates Ein-Dor et al's model used for looking at an IT industry in a country. Similar to their experience in the three countries, the researcher noted that the officially available details about the Jordanian IS/IT market were scarce and inaccurate. A dire need therefore exists for producing valid IT statistics. Many sources were approached in order to collect the relevant

⁷ Ein-Dor et al (1997) devised a framework for comparing the IT situation in three small developed countries (Israel, New Zealand and Singapore). This framework included four groups of variables that were studied namely controlled, dependent, exogenous mediating and endogenous mediating. Ein-Dor and his collaborators specified the intra-group variables and suggested how they could be operationalised.

data for the purpose of producing the thesis. Therefore, the description will be limited and based on the data obtained.

Figure 2.2: Factors Affecting IT Industry Success

(Source: Ein-Dor et al, 1997)



Controlled and Dependent Variables

The controlled variables were used by Ein-Dor et al (1997) to compare the three countries studied. They were operationalised by using the number of population, the area of country and the GDP per capita. Researchers have no control over the already controlled variables in non-contrived settings. Ein-Dor and his collaborators explained that those variables were used to determine which countries were eligible to include in their study. Relevant economic details about the Jordanian controlled variables were presented in chapter 1 and further details were also provided earlier in this chapter.

The dependent variables cover the IT production development and IT industry success measures. These variables represent the degree of success of the IT industry in a country. They were operationalised in Ein-Dor et al's study by various measures of success. The first group comprised IT product sales and contribution to GDP, number and size of IT firms and percentage of employees in IT production. The second group dealt with the IT industry success measures such as locally developed products, IT exports and stock market listings. The Jordanian dependent variables are discussed next under the headings of *IT*

production Development and IT industry success measures. As mentioned earlier, the discussion is brief due to the dearth of available data on the subject.

IT Production Development

No specific details related to IT product sale and contribution to GDP were available. The manufacturing side of the IT industry is almost non-existent. Jordanian IT industry is merely focused on trading and supplying Hardware and Software. It is very likely that the exports depend on the sale of some software applications and also on providing general IT services related to Internet applications. A rough annual estimate would be a meagre figure of 50 Million JDs (the percentage of exports from this figure is about 10 % or 5 Million JDs). This is hardly a contribution to the GDP because, if the figure was reliable it would mean less than 0.1 % which is nothing in comparison to Israel's 6 %, Singapore's 3.8 % or New Zealand's 3.5 % (Ein-Dor et al, 1997).

The figure for the officially registered IT companies is 415. The business activity and the numbers of those organisations are shown in table 2.4.

Table 2.4: IT Organisations in Jordan

(Source: Al-Hussain, 1997)

Business Activity	No. of Organisations
Sell and Service Systems	124
Sell and Service Midrange and Large Systems	12
Sell and Service Computer Peripherals	46
Sell and Service Graphics Equipment	8
Sell and Service Networking and Communication Equipment	22
PC Components and Accessories Sales	28
PC Systems Assembling	3
Hardware and Software Arabization	4
Sell Ready-Made Software Products (MS products, Autocad,...etc).	36
Software Development	38
Systems Integration	6
Internet Services	8
Consultancy Services	18
Training Services	42
Others	20

The IT industry in Jordan is thriving and will flourish and make a better contribution to the national economy if looked after properly. There is an

opportunity that the IT industry will assist in providing openings for employment which will in turn reduce the astronomical Jordanian unemployment figure (an unofficial estimate brings this close to 30 % of the total workforce) . Estimated numbers of workers employed in the Jordanian IT industry are given in Table 2.5.

Table 2.5: IT Employment in Jordan

(Source: Al-Hussain, 1997)

Profession	Public Sector	Private Sector	Total
IS Manager	140	160	300
System Analyst	290	360	650
Programmer	300	650	950
Computer Engineer	800	1200	2000
Consultants	16	30	46
Others	750	1750	2500
Total	2296	4150	6446

The Jordanian government has licensed one paging company (1989) and 10 data companies (during 1996 and 1997). Only the paging company and four of the data companies are in operation. There are also two payphone companies that were licensed during 1997. As for the cellular operators, there are two licensed operators (in February 1992) but only one of them was operating until the end of 1998 because of an exclusivity agreement.

IT Industry Success Measures

There are a limited number of products that are developed locally. The development in the IT industry is software oriented. Software Houses write packages and modify existing ready-made ones which are usually imported. Intellectual Property law is not yet fully enforced in Jordan. Perhaps, this could partly explain the low figures of the IT industry contribution to the GDP. Exact figures for IT exports are not available. In general, Jordanian IT organisations are small. There are no Jordanian IT companies listed on the Amman Financial Market. This could be taken as an indication that the IT industry in Jordan is far from being mature or successful.

Exogenous and Endogenous Mediating Factors

The exogenous factors are those that one can not attain control over at any level. Therefore, they have to be taken as given. The exogenous factors include the geographical location, raw materials and the national culture. Those details were presented earlier in this chapter. On the other hand, the endogenous mediating factors are readily controllable or influenceable by organisations and governments. Figure 2.2 illustrates a graphical representation of those factors.

Ein-Dor et al surrogated the endogenous mediating factors by using four variables. These variables were domestic IT use, firm strategies, government IT policies and government education policies. The following discussion will shed light on the Jordanian IS/IT market through focusing on those variables and their surrogate measures as discussed above (see figure 2.2).

Domestic IT Use

As a factor indicating the local sales base for the IT industry, the extensive use encourages development of an indigenous IT industry. The Jordanian National Information Centre categorised only 3 large Jordanian installations with large Mainframes, over 500 mid-range with Mini systems and many PC and small system users. Data concerning size of domestic IT market was not available. According to the Telecommunications Regulatory Commission in Jordan, revenues from telecommunications services was over 200 Million JDs in 1997. This comes to telecommunications revenue per capita of only 4.4 \$. The person per telephone figure was put at 12 for the year 1997. There is one Cellular phone per 90 persons.

Firm Strategies

The firms are small and have a long way to go before they make a sizeable impact on international markets. The strategies are more concerned with securing a share of the local market against national and international competition. Organisations do not generally specialise because of the size of the market. The locally demanded applications impose a constraining condition of focusing on

tailor making of applications. The restriction is to do with those customers who require those applications. The global presence has been minimal and is picking up. As for the labour cost, it is higher than the average for other industries. It is a high salary/high productivity geared industry. An estimate of the annual wage for a Jordanian IT professional with 7 years experience is 10,000 US \$. Although much lower than international standards, this figure is almost 100 % higher than the average annual wage for workers with similar qualifications in other Jordanian sectors.

Government IT Policies

The government policies for the IT industry are not clearly defined although there are indications that the government is aware of information-related issues. It was realised that the work has to be done on a number of levels. For instance, many decisions have been implemented regarding the encouragement of investing in Jordan. These included effecting changes to laws and legislating new ones that improve the environment and conditions of investment like relieving restrictions on foreign ownership and improving Customs and Excise environment. In addition, there has been a lot of improvement in the telecommunication infrastructure throughout the Kingdom. Therefore, there are attempts to remove obstacles hindering the prospects for having a worthwhile IT industry. Notwithstanding, Jordan has many problems that are still to be resolved. This is exemplified in the poor governmental support for research and development and the lack of incentives to ingenuity and innovation. The IT industry has to be of a very high priority if potential is to be realised.

Government Education Policies

This is a prerequisite for having a successful and mature IT industry as the educational system affects or makes the quality of most of the workers in general. Jordan has free compulsory education for the elementary stage. Pre-University schooling extends to 12 years excluding Nursery and Kindergarten years. There were 2 stages of schooling namely elementary (10 years) and secondary (2 years).

The nation's first University was founded in 1962 (Jordan University). At the present time, Jordan has 19 Universities (7 Public and 12 Private) and the government is about to license 5 new Universities. In addition, there are 44 community colleges (24 public and 20 private) that grant a Diploma of Higher Education. The figure of enrolled students at Higher Education Institutes was 100,000 for the Academic year 1995/1996. About 77500 students were studying at universities and the remaining 22500 were attending community colleges.

Higher education is not free but much cheaper than at Western Institutes. To give an estimate, a four year undergraduate degree course in Business would roughly cost 3500 US \$ in tuition fees. This figure is tripled for non-Jordanian students. The government gives only limited sponsorships to a limited number of students.

Eighteen of the 19 Jordanian Universities teach Computer-related subjects and the majority of graduates find jobs locally, whether in the private or public sectors. In addition, some choose to proceed with pursuing higher degrees and a proportion opt to seek high-paid jobs abroad.

2.6 Summary

This chapter was meant to add further clarity to the environment of the research. Therefore, it started by discussing the cultural reference as being the Jordanian national culture. This was done using Hofstede's dimensions of national culture. Further details related to the Jordanian economy and banking system were also presented. This was followed by a discussion of the Jordanian IS/IT market using a framework proposed by Ein-Dor et al (1997) for studying the success of IT industries in countries. Having laid down the foundations for the thesis, a detailed explanation elucidating the research follows. As the first of the two chapters in the literature review part of the thesis, the following chapter 3, goes on to establish the theoretical grounds pertaining to organisations and corporate information systems.

PART II
LITERATURE REVIEW

Chapter Three

UNDERSTANDING ORGANISATIONS AND CORPORATE INFORMATION SYSTEMS

3.1 Introduction

Having introduced the thesis by briefly explaining and justifying the procedural flow and providing a background coverage of the Jordanian contexts, chapters three and four review the relevant literature in order to contribute to building the theoretical foundation upon which the thesis is based. This chapter starts with a prelude to organisations which are the natural habitats for nurturing corporate ISs. It proceeds to focus on issues directly related to ISs which form the heart of the phenomenon under investigation.

3.2 Organisations: The Enigmatic Entities

This section gives a brief account of organisational thoughts as seen relevant to the introduction of the discussion about corporate information systems. It discusses what an organisation is and gives a short review of different researchers' views. This is further expressed in sub-section 3.2.2 by presenting a brief note on the potential for using metaphors as powerful and interesting approaches for 'reading' of organisations (Walsham, 1993). As Morgan (1997) suggested, metaphors and analogy are instrumental to our understanding of organisations. The last part of this section provides further insight into organisational dimensions as useful generic means for providing reflexive internal view about organisations.

3.2.1 What is an Organisation?

Representations of organisations have constitutive effects. The ways in which organisation are effected, and how people operate in them are not fixed and immutable. On the contrary, they are constructed and accomplished by the collective actions, imaginations and beliefs of human beings (Grey, 1998).

It is important to point out at this stage that our interest is concentrated in the IS/IT domain rather than the general organisational scope. This entails that the succeeding coverage will particularly focus on IS related concerns.

Studying ISs requires an understanding of their environment. To concentrate on those systems alone may falsely indicate that one is subscribing to a technological deterministic stance. This imperative implies that technology has the centre focus and in turn forces a technical agenda. It is therefore essential to make a swift turn, disavow this imperative and emphasise the importance of considering the contextual interactions which result from having and utilising those systems. The importance of what and how an organisation is perceived is equally applicable to other areas of management research. For example, Argyris and Schon (1978) explained how views of the nature of organisational learning are partly dependent on what an organisation is considered to be.

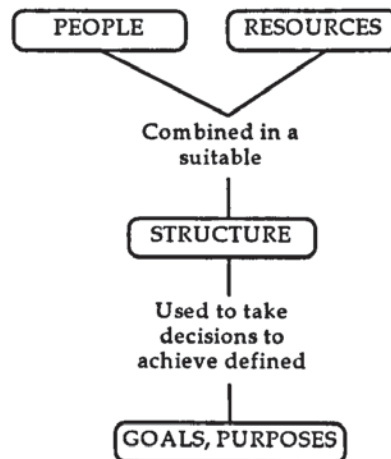
Theorists like Giddens (1982), Weick (1979) and Morgan (1997) have long envisaged that reality of organisations exists only in our minds. It is perceived through its interactions. According to the Oxford Dictionary, an organisation is 'the act or an instance of organising; the state of being organised; systematic arrangement; tidiness'. The essence of the meaning of *organisation* as interpreted from the explanation of the verb *organise* is that it has or consists of parts acting in co-ordination and has the nature of a unified whole. Researchers like Lucas (1985), after Schein (1970), have endorsed this stream of thinking. In fact he elaborated this view in a later publication (Lucas, 1991). Lucas considered the organisation as 'a rational co-ordination of activities' for the purpose of achieving corporate goals. The researcher senses *the endemicity and prevalence of systemic thinking* in the way organisations are perceived by researchers at large.

Checkland and Holwell (1997, p. 69), after Aiba (1993), presented a simple model of 'an organisation' as noted in much of the IS literature. This is shown in Figure 3.1. The implicit assumption is that the organisation is a goal-seeking entity. The systemic rational view was also espoused by a number of writers in the IS

literature (e.g. Ahituv and Neumann, 1986; Alter, 1996). However, Ahituv and Neumann referred to the organisation as a 'social' system. On the other hand, Gulik, Urwick and Fayol considered the organisation like a machine and described it based on departmental grouping of activities (Lucas, 1985).

Figure 3.1: A Simple Model of an Organisation

(Source: Checkland and Holwell, 1997)



In general, researchers seem to agree that organisations are made of individuals and achieve certain goals and objectives. However, some organisation theorists have argued that individuals have goals but not organisations (Haas and Drabek, 1973). They stressed that corporate goals need a consensus by those involved in achieving them and the employees do not normally pursue a single set of goals. A similar remark was made by Blackler and Brown (1985) who explained that the unitary approach, which assumes the existence of the plurality of interests in organisations, was inadequate. It should be acknowledged that there are other ways of perceiving the organisation besides the systemic rational (discrete-entity to use Kling's and Scacchi's (1982) term). For example, organisations can be considered, as contended in this thesis after Walsham (1989), as social systems.

Humans have a protean cast of mind. Each of us has a unique worldview (or *Weltanschauung*). Generally, researchers do not aim to reach a consensus about the understanding of the organisation as this is beyond their reach. However, it is

vital to have a view about such a construct because it will shape our mind-set and ultimately influence how organisational phenomena are investigated.

The adopted view in the thesis assumes that organisations can have different meanings based on the researcher's ontological assumptions of social reality. The researcher concurs with Butler (1991) who explained that although organisations are real in terms of their consequences on participants and environments, they are essentially abstractions. They are ideally open social systems that play important roles in the life and prosperity of mankind. Gouldner (1954) has long propounded the essence of the view that organisations are social systems and not rational systems. Daft (1998: p. 11) epitomised this view by describing organisations as 'social entities' that are 'goal directed' and are 'designed as deliberately structured and co-ordinated activity systems' which are 'linked to the external environment'. The researcher, after O'Brian (1991), contends that an organisation *may be viewed* as a socio-technical system for the purpose of understanding the organisational impact of ISs. Nevertheless, analysing a socio-technical system should necessarily entail studying relations between, not only technical and social (including cultural and political) interdepending factors, but also strategic, functional and environmental factors. Mumford and Weir (1979) utilised the socio-technical image when working out an IS design that accommodated both technical and social aspects and improved the task efficiency and job satisfaction in the organisation. The following sub-section 3.2.2 provides additional insight to enriching organisational analysis through enhancing the analytical understanding of organisations by the application of metaphors.

3.2.2 Organisational Metaphors

Metaphors are not devices for embellishing discourse (Morgan, 1997) but as Morgan remarked, they can be thought of as, '*a way of thinking and a way of seeing that pervade how we understand our world generally*' (p. 4: italics in original). Morgan emphasised the need for diagnostic reading that enables the researcher to apply different colour lenses or metaphors to bring out different qualities in the studied situation. Similarly, Kendall and Kendall (1993) suggested that

metaphors can be thought of as 'cognitive lenses' for making sense of all situations and considered that metaphors were fundamental in shaping reality. Morgan (1980) had in fact discussed the use of metaphors in generating images for studying subjects. He was keen to encourage modern managers to *imaginise* and use metaphors for improving ways of seeing, understanding and shaping actions (Morgan, 1993). Walsham (1993: p. 27) referred to Morgan's viewing of organisations through 'a process of metaphorical enquiry'.

Morgan publicised the use of metaphors as images of organisations. However, they were used long before his 1980 article. For example, Goffman (1959) looked at organisations as theatres and Ricoeur (1971) as texts. Later researchers such as Kendall and Kendall (1993), have extended the work by discussing additional useful metaphors while examining the language of ISs in 16 different organisations. Those were journey, war, game, society, family, zoo and jungle. Putnam et al (1996) used a different set of metaphors to study communication in organisations. Their set included the conduit, lens, linkage, performance, symbol, voice and discourse. Joerges and Czarniawska (1998), in re-situating technology for studying organisations, examined the technology-as-text metaphor. However, for the sake of clarity and relevance, the thesis limits the review to Morgan's oft-cited metaphors. Morgan's widely-cited work of 'Images of Organisations' (Morgan, 1997: second edition) presented a detailed explanation of eight metaphors of organisations namely machines, organisms, brains, cultures, political systems, psychic prisons, flux and transformation and instrument of domination.

The Validity of the Use of Metaphors

Some researchers advocate the validity of the use of metaphors for analysing organisational life (e.g. Bowels, 1990), while there are others, such as Boland (1989), who have totally opposed their use as valid tools or ways for expressing ourselves because they underlie our way of thinking. A third kind of researchers, like McCourt (1997), gave an opposing view to that of Morgan's by considering metaphors as useful analytical techniques rather than being fundamental and

indispensable tools. In line with Alvesson's (1993) argument that the metaphor is best understood through another framework to inform and guide its use, the researcher is inclined to favour McCourt's view and stresses that the use of the metaphor of choice to provide additional analytical insight, should not broadly contradict with the particular characteristics of the adopted paradigm. Notwithstanding, one could argue that the choice of paradigm is more fundamental and separate to that of the particular analytical metaphor. Alvesson (1993: p. 115) considered that metaphors 'give a broad and imprecise picture of the phenomenon, unless they are structured in a particular way'. He explained that structuring is possible when combining the object of the study and the metaphorical concept. Walsham (1993) pointed out that metaphors were only implicitly discussed in the IS literature as researchers did not explicitly specify the image of organisation they were drawing on.

It is worth noting that there is considerable overlap between images created through metaphors. They are not mutually exclusive in this regard and can, therefore, be used in combination due to the difficulty of demarcation or drawing boundaries. Morgan did not advocate otherwise. In fact, Morgan (1993) explained that *imaginisation* by using metaphors mobilises insights and interpretive abilities to arrive at creative ways for expressing new social and environmental possibilities.

The closest of Morgan's metaphors to the researcher's position of considering organisations as social systems is a mixture of 'organisations as cultures' and 'organisations as political systems'. This view concurs with Walsham's (1993) in advocating the inextricability of interlinkage of the two metaphors. Giddens (1984) and Foucault (1979) conjectured that power is omnipresent and plays a vital role as it is inherent in our purposeful actions. It has constraining and enabling effects. The importance of the power dimension was echoed by the MIT'90 research team (Scott Morton, 1991). Reed (1996) went one step further in asserting that power was the most overused and least understood element in organisational analysis.

3.2.3 Organisational Dimensions

In endeavouring to provide multiple ways for looking at organisations, the chapter has thus far discussed what an organisation is and presented metaphors as constitutive organisational analytical tools. The aim was to create many opportunities permitting the viewing through different angles. The researcher subscribes to the view that the organisation is a subjective construction and that social reality is constructed and reconstructed based on organisational interactions¹. This should preclude any planned focus on structural objective dimensions such as those used by the Aston Group studies. Pugh and his collaborators (1963) in the Industrial Administration Research Unit at College of Advanced Technology/Birmingham-UK (later became the Aston Group) had intended to relate behaviour to contextual and organisational settings. They analysed structure in terms of using six types of variables namely specialisation, standardisation, formalisation, centralisation, configuration and flexibility. Structuralist and constructivist stances have different underlying ontological assumptions. The structuralist constructs are simply not appropriate headings for performing a constructivist analysis because they expose only a limited slice of the organisation. Leavitt (1965: p. 211) with his widely cited structuralist framework, pointed to the latter view by stating that 'Approaches with strong structural foci have also on occasion fallen into the one-track trap, changing structure to facilitate task solution only then to find that humans do not fit the cubbyholes or technology does not adapt to the new structure'.

The organisational dimensions are presented here as major rubrics for initiating a rich-picture organisational analysis. Further elaboration is provided in chapter 5 upon presenting the organisational framework.

¹ The researcher interprets structuralism as a mode of analysis which primarily entails the examination of relations amongst a set of dimensions or components. Constructivism on the other hand emphasises the role of social and contextual factors in the analysis of a situation and not only the structural dimensions.

Figure 3.2: Organisations as Multivariate Systems
(Source: Leavitt, 1965)



Leavitt (1965) proposed the use of four interdependent variables, as shown in figure 3.2. His four dimensions were structure, people, task and technology. In discussing organisational change, Leavitt considered that his framework provided multiple entry points for efforts to effect change. Accordingly, Leavitt outlined three approaches to organisational change namely structural, technological and people. Presumably, if a change occurs to structure, say centralising or decentralising, then the performance of organisational tasks will be affected. Consequently, there may be repercussions or propagations that individually or collectively affect the dimensions of technology and people.

Leavitt's framework was seminal in the area of organisational analysis. It has inspired other researchers who used it with some adaptation to study change in organisations (Grant and Mergen, 1996). Another example was that of Willcocks and Mason (1987: p. 167) who produced 'the interdependence of organisational elements' framework, as illustrated in figure 3.3, with a similar theme to that of Leavitt's. However, they placed more emphasis on the role of planning and management.

Similarly, the MIT'90 framework linked the broad dimensions of the organisation together². The framework viewed the organisation as an equilibrium system. The

² An earlier version of the MIT'90 framework was originally proposed in an article by Rockart and Scott Morton (1984). They had particularised Leavitt's work by changing his generic 'task' into

aim was to carry out an analysis upon the acquisition and implementation of the information technology. The basic premise paralleled that of Leavitt's in assuming the interdependence of the organisational dimensions or elements of structure, individuals and role, technology, strategy and the additional fifth element of management process. It was argued that change to one dimension will consequently propagate resulting change in the other four dimensions.

Figure 3.3: The Interdependence of Organisational Elements
(Source: Willcocks and Mason, 1987)



The MIT'90 framework, as illustrated in figure 3.4, added the dimension of culture, including organisational politics, and has explicitly brought into play the direct role of the external socio-economic and technological environments.

Figure 3.4: Management in the 1990s: A Research Framework
(Source: Scott Morton, 1991)



'strategy' which was considered a broader concept for representing the tasks of an organisation. This latter view is to a large extent, shared by the researcher.

Mintzberg (1979; 1983), on the other hand, used the division of labour to describe organisations. He explained that they are made up of five parts which are inter-related and cause a resultant change upon altering any of them or the inter-relationships amongst them. These are the operating core, the strategic apex, the middle line, the technostructure and the support staff. Those parts vary in size and importance depending on the corporate strategy, the technology used and the embodying environment. He categorised organisations into five different types³ which are the entrepreneurial, the machine bureaucracy, the professional bureaucracy, the innovative and the adhocracy. Mintzberg explained that those types can coexist in one organisation.

Figure 3.5: The Seven S Diagram

(Source: Pascale and Athos, 1981)



As members of the American McKinsey consultancy research team, Pascale and Athos (1981) and Peters and Waterman (1982) have suggested that the organisational analysis should include seven dimensions, rather than Leavitt's four or Mintzberg's five. As illustrated in figure 3.5, these were strategy, systems, skills, style, staff, structure and superordinate goals. Pascale and Athos (1981)

³ Mintzberg's original five organisational configurations became seven later. The adhocracy gave way to the missionary, the diversified and the political (Mintzberg, 1989). In a later publication Mintzberg (1991) discussed designing organisational forms to help manage the interplay between seven basic forces namely direction, proficiency, innovation, concentration, efficiency, co-operation and conflict.

used the framework as the conceptual underpinning for their work on *The Art of Japanese Management*⁴.

Section 3.2 has presented some views and thoughts about the organisation and expressed several ways that can aid in seeking a rich organisational analysis. Morgan's metaphors were briefly described and further concise coverage discussed Leavitt's framework, Willcocks's and Mason's framework, the MIT'90 framework, Mitzberg's views on organisational dimensions and lastly the seven S diagram as explained by Pascale and Athos (1981). The following section will proceed to discuss corporate information systems, and in the process, survey some relevant support literature.

3.3 Corporate Information Systems

This section starts by presenting a background to the IS/IT field that contains the corporate ISs. It continues by highlighting some of the ambiguities and confusions surrounding the use of constructs and terms, and in the process, reflects on the views of researchers as reported in the literature. The literature coverage related to the research problem is given throughout chapter 4.

3.3.1 Roots and Influencing Disciplines of the IS/IT Field

The field of IS/IT is still young and has not yet acquired the necessary requirements to be justifiably and distinctively considered a discipline. This notion has been stressed by Schumpeter who emphasised that any field of enquiry must provide four kinds of knowledge in order to be considered a discipline (Mason et al, 1997). These four kinds are the empirical data, observations and facts, theories and paradigms and ethics and history. Mason and his collaborators focused on the history of MIS and argued that previous MIS research has addressed the first two kinds, and that there is active work in ethics (e.g. Walsham, 1996). The field is merely referred to as 'IS/IT' as it is typically

⁴ Two other members of the McKinsey team produced a slightly varied framework. Peters and Waterman (1982) presented a diagram with complex interactions amongst the seven dimensions (or S's). However, their middle S stood for 'shared values' which they equated to 'culture'.

presented in common academic parlance. The diverse influencing disciplines make it a rather complex but well rooted field.

The scope of the IS/IT field extends to cover all aspects related to the design, implementation, and use of the ISs in organisations. Friedman (1994) argued that the organisational time-path of using ISs is better located within the context of changes to computer utilisation in the IS field. He was referring to Nolan's (1973) stages model of computer organisational usage which expressed the time pattern of IS function development, as well as the division of a series of phases in the IS field (Friedman and Cornford, 1989). On the other hand, Ives et al (1980) discussed a model of IS research including IS environments, IS processes and IS sub-systems.

As explained in chapter 1 (see table 1.2), studying the role and value of ISs was reported as one of the important topics of research in IS. The other important areas of research are directly or indirectly related to this topic. This is not surprising since one would expect a focus on the optimal (efficient and effective) use of a resource, such as the IS, as of paramount concern, and perhaps the primary topic, while the other topics are complementary. Watson et al (1997) discussed other research issues such as strategic planning, IS alignment, information architecture, competitive advantage, data as a resource, human resources, security and control, integrating technology and software development. Those issues are either covered directly or alluded to during the review of the core literature related to the role and value of ISs which is presented in throughout chapter 4.

The IS/IT field is multi-disciplinary, pluralistic and has a multi-faceted nature (Avison and Myers, 1995). In calling for a fundamental re-thinking of the IS/IT field, Checkland and Holwell (1997) asserted the extreme state of confusion of the field with no agreement amongst researchers about its history, reference disciplines and even its basic concepts. Carrying out research in this field forces the researcher to survey different literatures. The process involves extracting

relevant components and combining them into a meaningful set of concepts to forge ahead in building and advancing this nascent field.

The more technical orientation comes from Engineering and Computer Science. This means that one has to understand, to a certain extent, the hardware and software constituents of those ISs. Although evaluating impacts of ISs does not presume technical determinism, the difference in technical capabilities is one of the system determinants or dimensions that needs to be considered and appreciated.

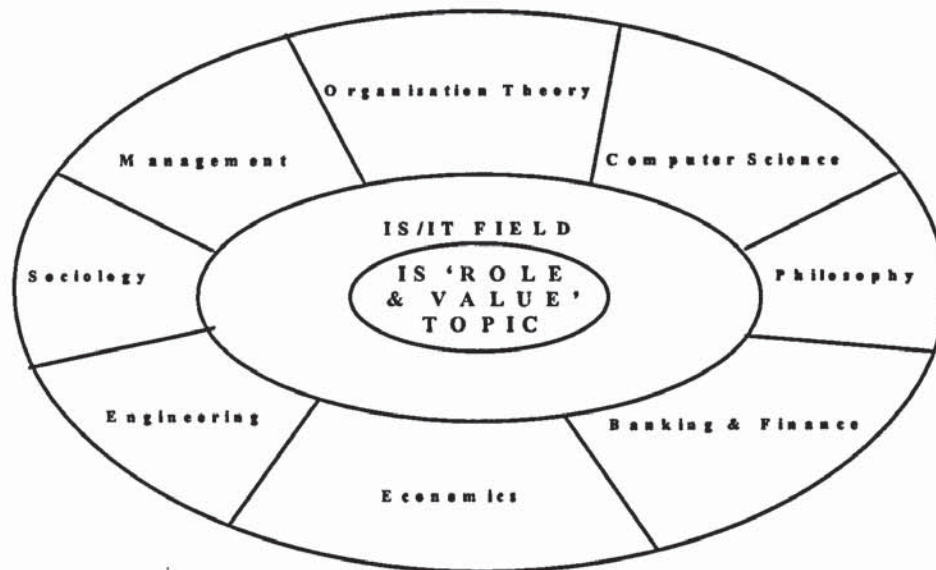
The business application of ISs engenders the need to cover the relevant literature in Management and Organisation Theory. For example, the management in an organisation is another determinant of IS use, as well as an area of impact. Therefore, the related literature has to be included.

The premise that ISs are basically social systems mandates the importance of reading in sociology. Two examples are Giddens's (1984) Structuration Theory and Bijker's (1987) Theory of Social Construction of Technology. In addition, the requirement to have a philosophical stance with clear ontological and epistemological views demands coverage of related topics in the philosophy of science.

Other economic matters have to be dealt with besides broadening the coverage of literature to include banking and finance. This comes as a result of researching banks and financial companies. In addition, a reciprocally matching extensive coverage to the literature concerning methodological aspects is considered necessary. Each piece of empirical research, regardless of the field, has to have a methodology section. This makes familiarising oneself with the plethora of published research works harder, yet more interesting and rewarding as a learning experience which is not to be undermined or begrudged.

Figure 3.6 demonstrates the roots and influencing disciplines surrounding the IS/IT field. It further emphasises the IS 'role and value' as the core topic of research which is positioned in the centre of the diagram and will be covered in chapter 4.

Figure 3.6: A Schematic Diagram Depicting the Research Topic, the Research Field and the Influencing Disciplines



3.3.2 Conceptualisation of Constructs and Terms

As was stated in section 1.5 of chapter 1 under the heading 'research assumptions and delimitations', the research did not adopt a pre-defined operationalisable definition of IS for a purely methodological reason. However, the researcher concurs with Bjørn-Andersen et al (1986) in acknowledging the lack of *consistent terminology* which adds further complication to an already disorganised field. Like what was said about the relevance of ontological assumptions and the understanding of organisations, there is the equally important consideration of the epistemological position which necessitates making explicit the researcher's conception of those related terms. Hence, this section discusses some key definitions for terms and constructs in the IS/IT field as presented in the extant literature.

Data, Information and Knowledge

Researchers generally agree on the basic understanding of data as being the raw and unprocessed information. Aiba (1993) looked at fifty definitions for data and information as used and defined by many researchers in the field and reported that they were mostly similar. The term *data* was referred to as raw facts or material, and information was, in all Aiba's surveyed definitions, described using data as the raw substance of information.

There are myriad potentially useful details available at large. However, the meaning of information, as a construct, is problematic and also a cause for wide confusion. For example, Lucas (1991) considered information as some tangible or intangible entity which helps reduce uncertainty about some state or event. This seems a reasonable way of interpreting such a term. There is a *limited informative content* that reduces the general usability of a piece of information. Boland (1987) on the other hand, argued for the *individual perceived meaning* as the *information* rather than the more generic meaning which makes out that any piece of information is automatically useful without specifying the application or the beneficiary. In this view, data is information that is inward-forming at the point of encounter or engagement. Iivari and Hirschheim (1996) considered three different views related to the users' requirements for information. The objective, emphasising the impersonal features such as task and position, the subjective dealing with the personal needs for information and the intersubjective which raises the collective need for information to form shared understanding. With a similar tone, Morgan and Smircich (1980) explained that knowledge can not be obtained independent of the individual's judgement and social construction. Furthermore, Habermas (1978) considered knowledge as a created human artefact that results from actions taken to produce and reproduce the human existence and welfare.

On the other hand, Galliers (1987; 1993a) and Land (1992) focused on the individualistic usefulness and the contribution of information to decision making

rather than the attributed meaning. Galliers's and Land's contention was centred around the individual's IS and the conversion of data to influencing practical actions, which in a way, is similar to Boland's abstractive argument, as discussed before, but more practically inclined.

Figure 3.7: The Process of Turning Data into Knowledge
(Source: Checkland and Holwell, 1997)



Focusing on the usefulness of information, Keen (1991b) went as far as considering that information defines the organisation. He was referring to the uniqueness of the business function in terms of the content, volume and use of the information it generates, transmits and receives. Checkland and Holwell (1997) used the term 'capta' to mean the collected data that are potentially relevant. They explained that the attribution of meaning converts *capta* to *information*, which are ephemerally meaningful, and consequently larger structures of information are converted to *knowledge*. This illustrates that the essence of understanding may be improved if one looks beyond the meaning or meaningfulness of information. Checkland's and Holwell's proposed process of conversion of data into knowledge is depicted in figure 3.7.

Information Technology and Information Systems

Another source of confusion lies behind the continuing attempts by researchers to distinguish between IT and IS as two separate constructs. Weill and Olson (1989) pointed out that in their six mini case studies representing five different

industries, each of those organisations used a different definition for IT and the trend was to broaden the definition rather than to narrow it down. Boaden and Lockett (1991) explained that the confusion in the areas of IT, IS and Information Management (IM) is caused by the profusion of terminology. The researcher envisages IT to be the smaller term which is embedded within the IS. The IS has long existed before the introduction of the relevant computer-based technology. The term IS is more widely used in Europe while the equivalent in the US is MIS⁵ (Boaden and Lockett, 1991). As for the IM, it is concerned with the management of the information resource and the IS plays a key role processing raw data in order to provide relevant information. The consistency and coherence of such terms can be better understood in line with the original premise of the thesis that ISs are basically social systems. Furthermore, this view disavows any deterministic stance that presumes ISs to be merely technical in nature. Additional elaboration is given through looking at some most prominent views as discussed in the IS literature.

Ein-Dor and Segev (1993) explained that the use of the different definable types of systems (e.g. MIS, DSS) was usually followed by a stream of research on the impact of those types on the organisation which helped fragment the IS/IT field. They remarked that 'there are really two types of evolution involved in information systems-one, the evolution of technology and its use and the second, the evolution of our naming or labelling of particular combinations of technology' (p. 186). Ein-Dor and Segev concluded that the labelling of terms rather than content drove our perception of the field of IS/IT and its constituents. Yet, Turban and Aronson (1998) suggested that terms like Management Information Systems (MIS) and Decision Support Systems (DSS) are content-free expressions because they have no universally accepted definitions.

The *rational* view presents ISs in terms of the constituents and focuses on the organisational use of information. At this stage, it is perhaps worth pointing to Boland's (1987) remark of the great influence Herbert Simon's view, of

⁵ Robey and Markus (1998) argued that the term MIS has almost disappeared to be replaced by a more common term like IS or occasionally CIS (Computer Information Systems).

organisations as decisions, had on our identification and thinking about information processing. This can clearly be seen in how the rational view subscribers considered ISs. One can readily see that the background comprised, as Boland summarised, the decomposed series of hierarchically structured decisions that make up, as it were, each and every organisation. This view was interestingly and expressively epitomised by Turban and Aronson (1998: p. 7) who stated that 'All managerial activities revolve around decision making. The manager is first and foremost a decision-maker. Organisations are filled with decision-makers at various levels'. In fact, the majority of the well renowned text books of ISs present ample coverage of organisational decision making by making reference to Simon's (1965) stages of decision making and types of decisions (c.f. Kroenke, 1989; Lucas, 1991; Alter, 1996; Laudon and Laudon, 1998; Turban and Aronson, 1998). As one example, Lucas (1991) considered ISs as executable procedures for providing information to support corporate decision making and control. On the other hand, Davis and Olson (1985) assumed that computer hardware and software were primary components, as well as data, personnel and procedures. With a multitude of slight variations, the systemic rational view is the most prevalent in the IS literature which means that one could easily quote tens of attributed definitions which hover around this point in the definitional space. Al-Alawi (1991) listed fifteen of those definitions for MIS and explained the subtle differences between them.

The essence of the systemic rational view was exemplified in Checkland's and Holwell's (1997) proposition about having two linked systems in the concept of an IS. These are the processing of *capta* (selected data) to provide information and the purposeful action that needs such information. A simpler version was long proposed by Mason and Mitroff (1973). In defining the variables comprising an MIS they considered the minimum to be a person of certain psychological type who seeks a representably manifested evidence within the organisational context in order to resolve a faced problem.

Of the positivist definitions of IS, the researcher considers Davis's and Olson's (1985: p. 6) view of MIS as the most comprehensive positivist definition. They defined MIS as 'an integrated, user-machine system for providing information to support operations, management, and decision-making functions in an organisation. The system utilises computer hardware and software; manual procedures; models for analysis, planning, control and decision-making; and a database'. Srivastava (1984) presented, as shown in figure 3.8, a similar conceptual view of MIS and depicted it as a simple technically oriented generic system independent of where it is used.

Figure 3.8: A Schematic diagram of the Organisation of MIS

(Source: Srivastava, 1984)



The other view is the *interpretive* one⁶. This has inherent ontological and epistemological differences in comparison with the rational view of looking at ISs. To the rational view, reality is realisable as it exists as an external entity (Archer, 1989) and knowledge is attainable by the collection of facts. Although the rational view does not exclude values from data, it pays little attention to such abstractions as if facts were the only data that mattered. The interpretive perspective advocates that knowledge could be acquired by an interactive dialectic process between the data and the collector of data. Reality is socially

⁶ Since this is the opposite view to the rational one, it is not intended to imply that it is an irrational view.

constructed through this process of interaction. Therefore, no particular definition is advocated for information systems, or even data for that matter.

In discussing some widely held views of ISs, Swanson (1991) added the information system loop which accommodates the understandings as expressed in the data processing view, the organisational mapping view and the organisational control view. This loop view considered IS as having an information context which is part of the organisational fabric. Upon pulling out the IS, it can be looked at as incorporating a chain of three component processes (acquisition, processing and employment) and supported by information store holding data, models and procedures.

Sahay and Robey (1994) explained that because of the relatively few material constraints to its use, IT is subject to social interpretation. The researcher subscribes to this view, which clarifies the researcher's methodological choice, as stated earlier, of not defining IT or IS for interviewees and respondents during Parts I and II of the fieldwork. One can reservedly state that researchers like Kling, Boland, and Walsham espouse such a view. This educated guess was made by extrapolation based on the researcher's perception of the philosophical underpinnings behind the adopted epistemological and ontological stances of those established researchers.

3.4 Summary

This chapter has introduced the organisation as the placenta where ISs are implanted. It has emphasised the importance of understanding them in order to gain thorough insight about the phenomenon of 'the use of ISs'. The coverage has extended to looking at concepts and terms in the IS/IT field.

The following chapter 4 will include a literature review and orientation that form the background material for discussing the three research questions. Together with chapter 3, the aim is to establish a coherent basis that constitutes a firm ground for providing a thorough and extensive discussion.

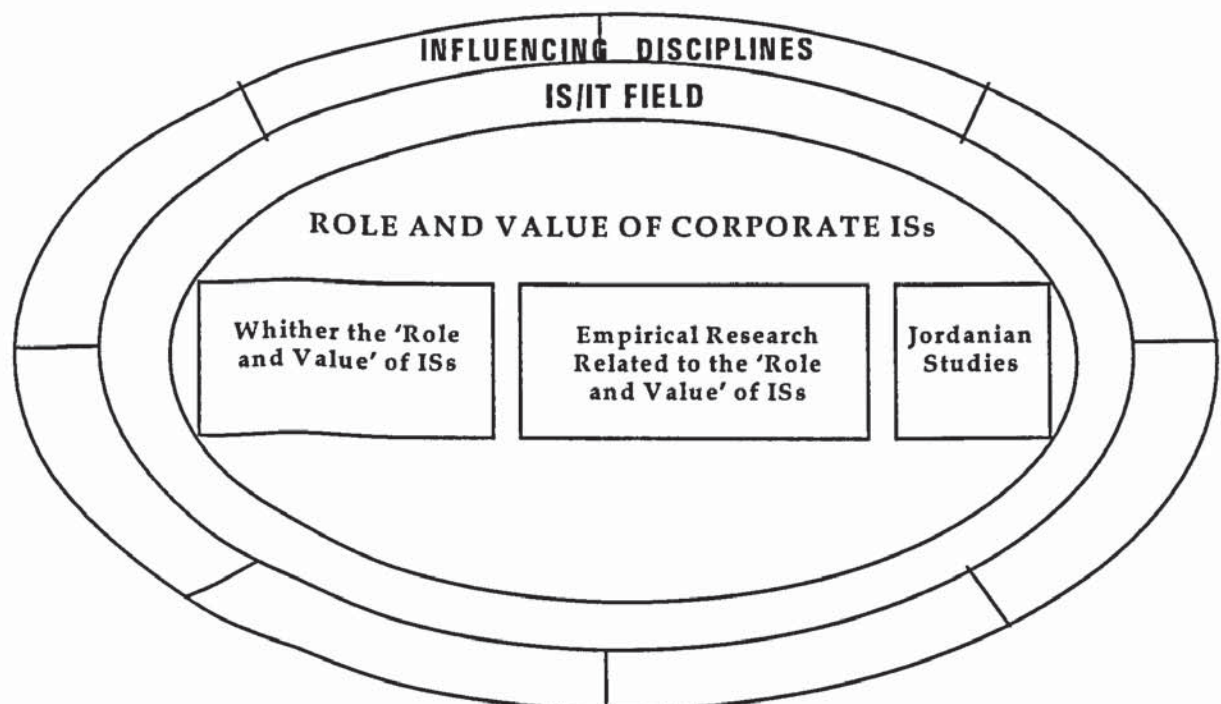
Chapter Four

ROLE AND VALUE OF CORPORATE INFORMATION SYSTEMS

4.1 Introduction

The previous chapter served to introduce organisations and corporate information systems. The intention was to look at the ISs in their natural habitat. In addition to the *influencing disciplines* layer, as appears in figure 4.1, where the coverage is implicit since the borrowed portions have become integral constituting parts of the hybrid IS/IT field, the next inner layer of *IS/IT* which covers a vast area, was briefly referenced in sub-section 3.3.1 in chapter 3. Furthermore, the coverage of the core literature, focusing on the area of the research problem with its three constituting questions, is included in the remaining sections of this chapter. Chapter 4 therefore, is used to pave the ground for raising and attempting to answer research questions one and two, which are related to the impacts of IS and the *reasons for those impacts* (or the *impacts attributions* as referred to henceforth), as well as providing more insights into the methodological applicability (question three).

Figure 4.1: Orientation of Literature Coverage



4.2 Whither the 'Role and Value' of ISs: A Conceptual Basis

Information Systems are used in organisations for the general purpose of serving to fulfil the organisational objectives. The degree of complexity of use is not uniform and the literature is full of cases of failures and successes. Nevertheless, it is extremely difficult to gauge the contribution of those systems within their differing contexts. A recent survey by a UK Government-backed study group (OASIG) reported that 80-90 % of IT investments do not meet their performance goals, 80 % of systems are delivered late and over budget, 40 % of developments fail or are abandoned and less than 25 % of organisations do properly integrate their business and technology objectives with only 10-20 % meeting their success criteria (FT, 24/9/1998).

Furthermore, Lucas and Turner (1982: p. 25) quoted a chairman of a \$3 billion US conglomerate to have said 'I receive about the same information today as was provided thirty years before our computers. Only now I spend millions to get it'. Many such quotes can be found in the IS literature. For instance, in an earlier study, Lucas (1975) remarked that he found little association between corporate performance and the use of IS and wondered whether the heavy investments in ISs were justified. Kauffman and Weill (1989) concluded that IT investments contributed marginally to the value of the firm. The American National Research Council Committee produced a report released in February 1994 which explained that the apparent productivity paradox between expenditure on IT and the tiny 0.7 % average yearly growth of productivity of the service sector could be attributed to similar factors (Metheny, 1994). For example, productivity measures did not reflect improvement in speed and convenience or account for the opportunity loss of not using the IT.

Child (1987: p. 48) suggested that the 'mutuality of IT and organisation remains in a formative stage and we have not yet proceeded very far along the learning curve in this area'. Although expressed in 1987, it is still valid today and will be for quite some time to come. The dire need is seen to understand and appreciate the efficacy of ISs in organisations. The major questions seem to be concerned

with the worth of investments in those systems and how much do they contribute to the welfare of organisations and society. In addition, the cruciality of improving and reorienting organisational analysis was brought about by the increasing dependence on the use of ISs in modern establishments. Answering such queries may necessitate raising even more related questions.

It seems reasonable to assume that organisations in general, are trying their best to utilise ISs to the full extent. Based on information obtained from Digital Equipment Corporation (DEC), Turban and Aronson (1998) reported that nine out of ten senior American executives valued their deliberate successful move to make computers vital to the business. The DEC sponsored research was carried out during 1991 and involved interviewing 320 chief executives, chief operating officers and strategic planners. Executives expressed that they played a role in managing their organisations' computers as strategic resources. An overwhelming majority (98%) said that senior executives must understand computers and their impacts, with 81 % appreciating the value of computer networking, 88 % used computers to increase communications and 87 % thought that computers cut the time to develop products.

The researcher envisages that looking at the role and value of ISs does necessarily involve a number of aspects. In the first instance, it makes a considerable difference how such a phenomenon is investigated. In addition, such an investigation might be perceived as an exercise in assessment so what is there to be assessed? Does the focus have to be on the organisational aspects like corporate performance or the technological aspects like the details of the hardware and software used? Furthermore, what are the impacts of using those ISs and to what reasons, causes or processes do we attribute those impacts (impact attributions)? These are only few of a multitude of questions that need addressing when attempting to study the role and value of ISs in organisations.

As for the reason behind carrying out such work, Weiss-Swanson (1975) suggested that general studies related to evaluation are carried out for one or more of the following purposes:

- 1- Assessing goals, plans or prototype designs.
- 2- Monitoring progresses made to achieving goals and performance expectations.
- 3- Determining reasons for successes and failures in order to increase effectiveness of successful endeavours and mitigate or wipe out losses.
- 4- Using findings for future improvements of goals and sub-goals.

In summary, the adopted view regarding the aim for investigating the role and value of IS/IT can, after Lucas (1993), be summarised in the following points:

- 1- Understanding the dynamics of the use of IS/IT in organisations.
- 2- Assessing and interpreting the general perceived impacts in terms of the role and value of the implemented IS.
- 3- Fathoming matters related to justification of investment in IS and how payoff might be accrued.

The remaining parts of this chapter outline the most relevant previous work that has been carried out on issues related to the 'role and value' of ISs. The coverage will include bringing together findings from previous research which has been undertaken as exercises in assessing investments, appraising projects, and evaluating systems and their impacts.

4.2.1 Concepts and Terms: A State of Ambiguity

Extending the coverage to encapsulate such a wide area of research as the 'role and value of ISs' is in itself problematic. The problem is exacerbated further by the lack of unified concepts and terms. The chosen strategy for investigating the phenomenon of the 'use of ISs' in organisations involves a simultaneous assessment of the *investment in ISs* and also the *evaluation of their impacts*. In principle, holistic studies of IS impacts and their attributions should include some evaluation and assessment of investment. It is an exercise in organisational analysis that calls for the consideration of all the factors which could possibly

have a direct or indirect impact. In addition, albeit focusing on the organisational perceived impacts, it is equally important to also consider the determinants of such impacts.

Carlson (1974) provided one of the first theoretical attempts to discuss the evaluation of impacts of ISs at length. Conceptually, the difference in evaluating the IT and the IS might be nominal. The majority of researchers who have tried to evaluate the corporate IT were at the same time evaluating its organisational embodiment as IS. The variance might arise from the broad inclusion of particular elements within both constructs. One would assume that a concomitant resolution to the evaluation of IT is the focus on technical issues. Carlson explained that there are two dimensions for IS evaluation namely efficiency or performance and impact. Evaluation of efficiency or performance is the commonest in the extant literature. The impact evaluation, as the name implies, deals with those multiple effects on the organisation.

Carlson pointed to the complexity of the task of evaluating impact and the apparent lack of methods as two major hindering dimensions for carrying out the exercise of the evaluation. The complexity was due to non-uniform measures, multiplicity of interacting influencing factors, inability to control all factors and varying criteria for judging impacts.

As alluded to in chapter one, the word *impact* is, as Danziger (1985) explained, deceptive because it implies a cause and effect linkage. The use of ISs has resulting effects on individuals and groups/collectivities. Danziger explained that those effects appear or 'emerge in a varied, subtle and evolutionary manner' (p. 8). Nevertheless, some researchers like Sanders (1984) have looked at evaluation as being synonymous with the impact of an IS upon the organisation and the individual while others like Symons (1990a; 1990b, 1991a; 1991b) presented her work from the different perspectives (or rather using the different terms) of assessment of investment, evaluation of IS and also impacts of ISs. On the other hand, Walsham (1993) presented evaluation as one of four major issues

in interpreting organisational ISs. He emphasised that much of the previous research work took the formal-rational view and pointed to the advantages of the interpretive approach. The researcher considers that the impact of an IS implies the resultant effect of the use of IS. Impact has a comparatively narrower scope than the role and value of an IS and, as Danziger's argued, implies cause and effect linkage. Alternatively, the role and value is broader and is considered more meaningful and pertinent to performing a content, context and process analysis of the phenomenon under investigation.

Another point worth noting is the difference between benefit and value. The researcher concurs with Willcocks (1994) in considering value as a broader concept than benefit. Assessing the benefits and impacts of investments in IT has always been considered difficult (Chervany and Dickson, 1970). Powell (1992) presented the view that evaluation, justification of investment in IT or computer investment appraisal is not only difficult, but problematic. The difficulty arises from the fact that the resulting income is not clearly defined or can not be easily quantified like other investments. Silk (1990b) suggested seven possible types of justification for IS/IT projects. These were the must-do (the unavoidable investment), faith (gut feeling), causal logic, beneficial direction, estimate of size of change, quantified value of expected change and financial comparison of benefits. With a rather sceptic tone to subjective methods, Powell (1992) discussed mostly objective methods and suggested possible solutions that range from accepting investment in IT like any other investment to acknowledging that IT is very different and hence unquantifiable. Positivist techniques are the classics as compared to non-positivist ones. A rather old example is Zmud's (1978) article. Zmud suggested that the evaluation of MIS could be carried out by using information economics which employs rigorous statistical decision theory, through an estimation of the service by the user or through users' perception of the overall quality of the provided service.

In actual fact it is difficult, if not impossible, to separate the meanings of the activities of appraising, evaluating and assessing during the life time of an IS in

an organisation. The appraisal is commonly linked to projects at the feasibility stage when it is undertaken to forecast if the project is worthwhile. As for the evaluation it might take place at the different stages in the life cycle of a system and could include the evaluation of the system itself and its organisational and general consequential impacts. The assessment has a longer term perspective. To assess an investment implies having to wait until the total benefits (value) have been accrued and it might be some time before the advent of such a state or event.

According to Elliot and Melhuish (1995), the IT evaluation literature focuses on the evaluation of benefits as a result of using the technology. This unilateral view is not comprehensive and inconclusive by virtue of focusing on one particular dimension. Symons (1991b), after Markus and Robey (1988), discussed four perspectives (what Markus and Robey termed as imperatives) related to the corporate use of IT as mechanistic, determinist, systems and interactionist. The first expresses how an organisation uses all available resources including IT while the second premises that IT is what governs and shapes business and that technology has its own driving logic. The system perspective acknowledges that IS is but one system providing technical capabilities that assists in carrying out the business-working plan. The interactionist perspective advocates the need for understanding the intricacies resulting from organisational interactions of workers and context as related to the introduction and utilisation of the IS into the organisation. Willcocks et al (1998) provided a wide range of sources for IT evaluation and discussed the fundamental technology shifts which have profound implications for making, assessing and monitoring investments in IT. Their research was a follow up to previous work that explored IT evaluation and the *catch 22*, in terms of how productive is the contribution of IT (Willcocks, 1992) and a series of works with the theme of IT investments and the productivity paradox (Willcocks and Lester, 1991; 1996; 1997).

The researcher's adopted view is close to that of Davis and Hamann (1988: p. 284) who have argued for an in-context assessment as 'the evaluation of an

organisation's computer-based information system and its information system function within the unique context of the organisation itself'. Davis and Hamann explained that the assessment of an IS may have differing meanings depending on the timing, scope and context of evaluation. In addition, they outlined six different levels of assessment as:

- 1- Cross-sectional dealing with the effect (impact) of an application.
- 2- Life cycle assessment of an application.
- 3- Assessment of the integrated working of a set of applications.
- 4- Processes or sub-functions related.
- 5- Benchmarking of the IS and its function relevant to generally accepted practices.
- 6- The in-context assessment.

Acknowledging the synonymity of the use of the terms evaluation and assessment in the IS literature, Dickson et al (1988: p. 130) explained the slightly different connotations associated with each. They considered evaluation as 'the act of placing value on the object' while they linked assessment to investigating the IS function. Dickson and collaborators correlated the assessment to qualitatively answering the question of 'how good is the IS function?'

The researcher subscribes to a contention which mixes the views of Davis and Hamann (1988) and Dickson et al (1988) as discussed before. Both of those works based their arguments on Cameron's (1980) six critical questions for addressing the organisational effectiveness. The questions were related to domain of activity, the perspective or worldview, level of analysis, time frame, type of data and referent or base for comparison. However, for the sake of uniformity of explanation in this thesis, *the researcher assumes that both evaluation or assessment (of impacts or effects and also of investment in IS) are taken to imply evaluating or/and assessing the role and value of ISs*. Consequently, those terms are used interchangeably throughout the thesis. The following presentation of previous empirical work, as existing in the literature, will therefore concurrently cover investments in ISs, evaluation of ISs and assessment of impacts or effects of ISs.

4.2.2 Impact or Usefulness of ISs: A Conceptual Question

There has been a plethora of studies dealing with the differing potential impacts that IT has or may have on both organisations and people. It is a general trend that evaluations are generally centred on the study of the impacts of IT. The benefits of ISs can be in contributing to efficiency, effectiveness and in attaining a strategic or competitive advantage (Silk, 1990b). In addition to having a better understanding of investments in ISs, impact evaluations are useful for improving the design of future ISs (Carlson, 1974).

Smith (1987) explained that the organisation needed to have a clear operating role statement related to the use of the IS as an integrated part of the business plan and its objectives. This, as Smith elaborated, should cover running corporate utilities, choosing tools and training, setting and maintaining policies, standards, control, security and quality. In addition, the role statement will cover maintenance/enhancements, development of new applications, ways for delivering information and also the research and development in order to keep abreast of the evolving technologies. This illustrates some important points of consideration that determine and influence the role and value of ISs in organisations.

Effectiveness of ISs

The effectiveness of ISs has been a major concern in IS research for the past 3 decades. Davis and Olson (1985) suggested considering using a set of measures for effectiveness which comprised the output changes in significant tasks, estimation of financial value, system usage and user satisfaction. On the other hand Strassman (1985) argued that the only practicable measure for IS effectiveness is the Return On Management (ROM) which is the value-added to the organisational financial performance by the management as a result of using the IS.

Keen (1980) made a key contribution by pointing out the importance of figuring out what was the dependent variable. Researchers like Delone and McLean (1992)

heeded Keen's call by emphasising the need to focus on the search for the dependent variable in order to understand the effectiveness of ISs. They identified four dimensions of IS success as system quality, information quality, system usage and user satisfaction. In addition, they considered two dimensions for IT impacts as the individual and organisational impact. Glorfeld (1994) reported details of the effectiveness of organisational IS/IT. Her model came as a result of merging measurements of IS success and the impact of IT based on Delone's and McLean's taxonomy for studying IT effectiveness. She basically considered the IS success and IT impact as two dependent variables. The operationalisation of variables involved utilising many sub-measures. Glorfeld (1994: p. 5) stated that the problem was with the 'overabundance of measures'. This was a typical positivist research focusing on mostly the technical capabilities of the IS. It omitted the other contextual factors that play an important role in realising and influencing the impact.

Figure 4.2: The Construct Space for IS Effectiveness

(Source: Grover et al, 1996)



On the other hand, Grover et al (1996) argued that the goal of IS research is to improve IS effectiveness and proposed a construct space for IS effectiveness as shown in figure 4.2. They used six classes of effectiveness measures to produce a comprehensive survey of previous work in the literature based on six categories of the evaluation types of IS for both individual and organisational units of analysis.

User Satisfaction as A Surrogate Measure of IS

The construct of user satisfaction has conveniently been used as a surrogate measure of IS effectiveness and is certainly well established in the literature (Melone, 1990; Allingham and O'Connor, 1992). In a relatively early article, Lucas (1975) raised the importance of considering the attitude and perceptions of users. At a later time, Bailey and Pearson (1983) devised a scale for measuring the user satisfaction. This involved soliciting the opinion of users on matters related to their use of the IS. On the other hand, Bakos (1987) explained that ever since the use of this construct was established, our understanding has resulted in finding better ways to measure it which helped produce more rigorous findings. Melone (1990: p. 80) explained that despite the difference in the definitions of user satisfaction, researchers who advocated the use of this construct seemed to agree on the notion that the construct provided 'some form of evaluative response'.

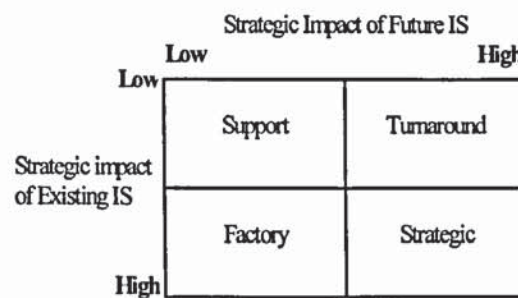
Another point that has received much discussion in the literature is who carries out the evaluation and whether there is a need to involve users. Mathieson (1991) studied the link between the adoption of IT and the users' evaluation. He concluded that users who gave a positive response were more encouraged to use the system. At a later time, Mathieson (1993) suggested some methods to reduce bias in users' evaluations such as focusing objectives of evaluation and informing respondents about any special issues to be considered in the rating.

Furthermore, Allingham and O'Connor (1992) looked at the relationship between the type of user, user involvement in the design and development of IS and the user information satisfaction. Their study was positivist and considered management activity, organisation function and user involvement as the independent variables, and user information satisfaction (a surrogate measure of MIS) as the dependent variable. Allingham and O'Connor concluded that user information satisfaction varied between users based on the organisational function and the user involvement as the technical users were less satisfied with the MIS than the administrative users.

4.2.3 The Strategic Importance of ISs

Perhaps, more than being helped by computers, it might be the case that organisations will shape their strategies and structure to fit new information technology (Main, 1988; Grabowski and Lee, 1993). Lucas and Turner (1982) discussed three types of relationships between IT and corporate strategy based on the level of integration of the ISs and the products or services during strategy formulation. These were 'independent' where the system has the primary objective of attaining operational efficiency, 'policy support' when the system aids with repetitive decision making and 'fully integrated' when the system helps introduce new products or enter new markets thereby creating new opportunities.

Figure 4.3: McFarlan's and McKenney's Strategic Grid



In the same vein, McFarlan and McKenney (1983) classified organisations by their needs for using IT as illustrated in figure 4.3. They considered that organisations in the 'support' quadrant need ISs to support their work for now and expect little change for the future. This is different to the positioning in the 'turnaround' quadrant where, although current strategic use is low, they will be looking for competitiveness based on the use of ISs. However, organisations in the 'factory' quadrant do currently depend on those systems for their competitiveness but this will not last for the future. The organisations in the 'strategic' quadrant do heavily depend on their ISs and will continue to do so in the future.

Many researchers have strongly emphasised the strategic importance of IT (e.g. McFarlan and McKenney, 1983; McFarlan, 1984; Ives and Learmonth, 1984; Porter

and Millar, 1985). Benjamin and Scott Morton (1988) stressed the importance of some IT properties for strategic use such as:

- 1- The ability to improve the interconnection between people, organisations, and processes, as well as providing complete and timely data base access.
- 2- Enabling new opportunities to be exploited every few years due to the rapidly improving capital intensity ratio of IT.

In emphasising the importance of ISs, Venkatraman (1994: p. 73) remarked the current operative phrase which states that 'IT changes the way we do business'. Porter (1985) suggested that organisational impact of IT can not completely be understood by looking at corporate performance that is measured at a high level of aggregation but rather through studying every activity in the value chain. Each of those activities has a physical component and an information component. Porter contended that IT affects ways of performing those strategically relevant activities, as well as affecting the linkages among activities. This can be used to benchmark the performance of these activities in the organisation (based on lowering costs) against competitors. In addition, scrutinising the value chain of those activities may help create better products and attain competitive advantages.

Sethi and King (1994) were also advocates of the importance of the strategic benefit of IT. They even developed a measure of the contribution of IT applications to providing a corporate competitive advantage based on the key dimensions of efficiency, functionality, threat, preemptiveness and synergy. Glazer (1993) argued that firms, which successfully use IT for competitive advantage, are the information-intensive firms who focus on information as the key asset to be managed rather than the technology. Similarly, Kivijärvi and Saarinen (1995) explained that the investment in ISs or the payoff should be associated more with long term system maturity (learning and development) rather than the short-term superior financial performance of organisations. They considered that ISs could be used to import a competitive advantage. Furthermore, Weill (1990) reported three specific uses of IT in organisations as

strategic (long and short term planning), informational (providing information that may aid in the decision making) and transactional (for the execution of the actual day to day operations).

Figure 4.4: IS Strategic Fit

(Source: Chan and Huff, 1994)



The importance of aligning business and IS strategies was studied by Chan and Huff (1993; 1994). Figure 4.4 shows their suggested model.

Figure 4.5: The Strategic Alignment Model

(Source: Henderson & Venkatraman, 1993)



Another strategic alignment model that came as one of the results of the Management in the 1990s (MIT90s) programme at Sloan School of Management is shown in figure 4.5. This model specifically combines the traditional notion of

function integration with the concept of strategic fit (Henderson & Venkatraman, 1993). The dimensions of the model reflect an external-internal alignment that must be managed. Similarly, Burn (1996) suggested that a strategic alignment model existed at the functional level (internal alignment) and a more dynamic model at a strategic level (external alignment).

On the other hand, researchers like Hopper (1990), doubted the strategic use of ISs. Hopper contended that the strategic advantages of ISs are ephemeral and considered them unrealistic as they depend on the imaginative rather than actual use of the system. Doyle (1991) stressed this point further in the context of discussing the use of Strategic Information Systems (SIS) by querying the usefulness of such systems because they impose meanings that could stifle internal organisational creativity. Doyle argued that those frames could become cages. In addition, some have tried to test the competitive use of IT empirically. For example, Powell and Dent-Micallef (1997) reported that IT *per se* did not generate sustainable performance advantages in their study of the retail industry although IT was found to be a useful leverage or enabler. This is in line with Child's (1987) argument which considered that IT extends the range of possibilities, but nonetheless, is not the determinant of organisations. Child stated that 'Competitive conditions are drawing forth both advances in IT and organisational adaptations which benefit from the advances in technology' (p. 33). Sohal and Ng (1998) carried out an empirical study involving the top 530 organisations in Australia with the aim of determining if IT was used strategically to meet competitive issues. They concluded that in organisations where IS was improperly used there was no close alignment between IT strategy and business strategy, sustained IT structure, lack of understanding of the potential of IT and lack of senior management support.

Once again, it has to be said that establishing the strategic role of ISs is problematic. The literature is inundated with models and frameworks prescribing how to theoretically base such studies. Earl (1989) referred to over 15 SIS models or frameworks of strategic orientations which is large by any

standard and Elliot and Melhuish (1995) produced a table of 11 models and frameworks that considered the assessment and operation of IT at a strategic level. Amongst those were the critical success factors (Rockart, 1979), the value chain (Porter and Millar, 1985) and the information economics (Parker et al, 1988).

The problem could also be related to how we evaluate the strategic advantages of ISs. For instance, Clemons (1991) distinguished between *strategic* and *automation* applications and argued for the need to have different techniques of evaluating the contribution of those applications. Based on guidelines and principles for analysis of strategic IS investments, Clemons suggested seven lessons to be learnt which included ranking alternatives, working with numbers, balancing forms of risk, managing risk, leveraging non-technological assets to sustain competitive advantage, sustaining co-operative advantage and preparing for the down-side.

4.3 Empirical Research Related to the 'Role and Value' of ISs

Investment in IS has traditionally been concerned with looking at the *value* and *return* as a result of making an investment. Most of the previous research efforts depended on assessing the economic value. The investment in ISs was considered like any other capital investment which undergoes depreciation and is judged by using ROI or similar financial techniques (Ward, 1990). The research originating under this heading was positivist and hence adopted positivist techniques for assessing such investments. In brief, positivist work is characterised by the hall-marks of a traditionally defined scientific research (e.g. causality, statistical generalisability, refutability,...etc). On the other hand, non-positivist work is basically constructivist which seeks to build a rich contextualist picture of the case researched.

In order to produce an organised coverage of the empirical studies, they have been split into three groups namely positivist studies, non-positivist studies and studies of the effect of culture on IS/IT diffusion. These are covered next.

4.3.1 Positivist Studies

The introduction of IT into an organisation will very likely result in some changes. It may make accurate information readily available to top management and possibly, as others might contend, increase the capacity of managers at lower and middle levels to make less routine decisions (Er, 1987). Robey and collaborators (Robey, 1981; Bjørn-Andersen et al 1986) surveyed eight organisations in five countries. They concluded that computers were used to decentralise decision making without causing loss of control over entire operations, and that computers had reinforced the organisational structure. Hitt and Brynjolfsson (1997) reported that increased investment in IT was linked to decentralisation of authority and related practices.

In a recently published study, Francalani and Galal (1998) looked at the combined impact of changes in IT investment and work composition (clerical, managerial and professional) on the productivity in 34 US life insurance (stock) companies over a ten-year period between 1986 and 1995. The companies were strategically grouped into *market niche* and *diversification*. Reported results varied amongst the two strategic groups as the niche companies had high productivity upon introducing higher investments in IT and there was a simultaneous decrease in clerical and managerial employees. The decrease in professional employees showed a negative effect on productivity, albeit an increase in IT investment. The findings for the diversified companies were almost the opposite. For example, increasing IT investment resulted in improvement to productivity when number of professional employees was decreased and numbers of clerical and managerial employees were increased. Francalani's and Galal's study was based on the premises of the hypothetico-deductive model. The contribution seems generalisable considering the large number of companies, but no one can really claim that the workforce composition rules are transparently applicable even to companies belonging to the same sector.

4.3.1.1 Impacts of IS/IT

There have been an abundance of studies that have looked at the different of impacts of the use of ISs in organisations. The coverage here is presented under four headings namely general impacts, impacts on the organisation, impacts on the individual and impacts on the industry/market.

General Impacts

Swanson (1987) reviewed the IS literature in terms of a typology of basic research questions about the system's use. These questions were related to three levels of analysis namely individual, organisation and market. Swanson went on to identify some determinants and effects of the use of IS and explained how they were looked at in the literature. His list of determinants and effects is included in table 4.1.

Table 4.1: Determinants and Effects of IS Use

DETERMINANTS	EFFECTS
<ul style="list-style-type: none">• Environmental Heterogeneity• Environmental Instability• Environmental Assumptions• Task Uncertainty• Task Variety• Task Complexity• Equivocality• Core Technology• Organisation size• Rational Objectives	<ul style="list-style-type: none">• Departmentalisation• Hierarchy• Span of Control• Functional Differentiation• Centralised Control• Delegation of Decision-Making Authority• Evaluation• Formalisation• Power• Lateral Relations• Stability and Rigidity• Job Routinisation• Institutionalisation• Competitive Advantage

It is worth pointing to the fact that Swanson's discussed effects (e.g. routinisation, and formalisation) were emphasised due to an organisational thinking and practice influenced by a discourse dominated by the question of stability. Orlikowski (1996) explained that this discourse was oriented around the organising of mass production and bureaucracy and not change or organisational transformation. She suggested that the backstage (change) was becoming

increasingly centre stage, or rather stability is out and change is in, as necessitated by the prominence of watchwords like flexibility, customisation and learning and visions of agile manufacturing, virtual corporations and self-organising teams.

The role of technology in transforming the workplace is becoming a widely accepted reality. As long ago as 1974 Dickson argued that the technology sustains and even promotes the existing political system. Dickson (1974: p. 30) expressed the view that 'technology and social patterns therefore reinforce each other in a somewhat dialectical fashion at both a material and an ideological level'. On the other hand, Orlikowski (1991) emphasised that current discussions do not point to the tremendous difficulties associated with the successful implementation of organisational change against the social inertia of established practices and routines. Back in 1981, Keen (1981: p. 24) considered this 'social inertia' as the state of remaining static albeit trying hard to effect change.

Impacts on the Organisation

Researchers have studied different aspects of the impacts of ISs on organisations. For example, Carter and Cullen (1983) carried out a field survey with the intention of determining the influence of computer technology on structural dimensions of newspaper organisations in the United States. Their primary instrument for collecting data was a questionnaire. They also collected data from published reports for the years 1978 and 1979. Carter's and Cullen's study involved measurement of a number of variables which were technology, decision making, decision levels, division of labour, monitoring/control, normalisation, administrative intensity, unionisation, age and size of organisations. In general, the data showed limited support for the argument that technology has a major influence on the structural dimensions. Additionally, minimal support was evidenced for the idea that early adopters of technology have had more time to become familiar with the computer and, accordingly, exhibit higher levels of utilisation. It is important to note that the computer was the core organisational technology and not the support IT for those organisations.

Yap and Walsham (1986) studied the relationship between the use of IT and organisational variables. They surveyed a sample of 638 business organisations in the service sector in the UK. The results showed a variation of the proportions of managers and information workers in relation to the size of the organisation and the relationship between the use of computers and profitability. No evidence was found to support the proposition that the use of computers increased profitability. It was also found that organisations using computers were more formal in communications and had a higher growth rate.

Franz and Robey (1986) studied the organisational factors related to user involvement in the development of ISs. They surveyed 118 user-managers in 34 companies and found out that the user involvement in the design and implementation was positively related to the users' perceptions of the usefulness of the system. This was not true for the organisational factors but only those factors that were either directly related to the perceived usefulness or were moderators between the involvement of users and usefulness.

The role of IT in enhancing control mechanisms in a work group was studied by Lee and Treacy (1987). They explored two conceptual leadership models by collecting data from 136 managers and professionals who were users of well-established ISs. Their main conclusion was that IT impact (measured by effect on task clarification, work assignment and procedures specifications in the leadership behaviour theory; and ability, information support, intrinsic motivation, task feedback, unambiguous procedure and collegial interaction in the leadership substitute theory) could be studied by either of the two theories and the impact itself was found to be stronger in dynamic environments.

Martin (1988) argued that the advances in computer and communications technology constituted the driving force behind the evolution of managerial computing. He looked at senior management use of computers through studying four organisations (two private and two from the public domain). Martin

interviewed 26 top managers and discovered that in many instances senior managers reported that rewards in an informational sense were not significant.

Wijnhoven and Wassenaar (1990) carried out empirical research to study the impact of IT in 11 Dutch organisations in four different sectors. They reported that ISs were useful in realising more centralisation and impersonal control in addition to the elimination of tedious jobs and organisational bottlenecks. Competitiveness was noticeably increased through cost savings and service improvement with the aid of communication and interorganisational systems. However, they gave an admonition that some problems existed with their conclusions on competitiveness. Wijnhoven and Wassenaar linked impacts to the differing ways of implementing ISs in those organisations. They pointed out that a precise measurement of efficiency and effectiveness was very difficult. Their research was positive which presumed a set of hypotheses based on Swanson's (1987) list of impacts as shown in table 3.1. They also used Mintzberg's (1983) organisational types and Markus's (1984) system types.

Wilson (1993), on the other hand, discussed fifteen positivist studies that looked at the evaluation of the effects of IT on the economic and strategic performance. Those studies were selected on the basis of the performance construct as the main criterion. The ancillary criteria incorporated different levels of analysis in order to avoid biases. Wilson paid much attention to threats affecting external and internal validity. The summarised conclusions were in line with the productivity paradox as benefits were not obvious.

Dos Santos and Peffers (1993) presented a framework that linked the source of impact to impact outcomes for the purpose of evaluating the impacts of investments in IT on the organisation. They used their framework to analyse a number of studies that were categorised as functional and aggregate IT investments. As with Wilson's (1993) review of the literature, Dos Santos and Peffer's reviewed studies were positive in assuming causality while investigating organisational impacts of IT.

On the other hand, Brynjolfsson and collaborators (1994) explained that evidence of two significant trends in the last 15 years are clear, namely the decrease in the number of employees in the average business establishment, and the enormous growth of the real IT stock.

Blanton et al (1992) examined the IT organisational structure and support in two very similar organisations, in terms of profile and environmental states (two banks). The aim was to contribute to the contingency theory of the organisation of IT. They used a model that linked structure to strategy and environment as a triangle which would affect the corporate performance. The reported findings were related to the substantial difference in structure between the two banks and that one of them was significantly more effective in managing IT support.

Lubbe et al (1995) studied the profit impact of IT investment in 20 long-term life insurance companies in South Africa. They tested two models of impact. The first compared the computerisation index (CI)¹ with profitability ratios and the second used the operating expense ratio (profitability measure) and the IT expense ratio to measure the level of IT capital intensity. They found a positive correlation between CI and the financial ratios. They also concluded that the most profitable firms are more likely to spend a higher proportion of their non-interest operating expenses on IT.

Renkema (1998) raised the importance of appraising the information infrastructure. Such investments in IT infrastructure provide the base for subsequent applications. Renkema provided a 'P4 model' to explain investment which involved managing the product, process, participation and politics of decision making. Investments in IT infrastructure form the greater parts of the total IS investment - 58 % according to Broadbent and Weill (1997). However, they reckoned that the contribution of IT infrastructure to revenue amounted to only 4 %.

¹ A measure of the extent and sophistication of computerisation originally suggested by Kwong and Mohammad (1987). It incorporated a number of factors such as the management activity level and other details related to the system used and the organisational characteristics.

Grover et al (1998) looked at the influence of IT diffusion on perceived productivity. They explained that investment in IT was not seen to realise added value because of the variety of methodological approaches, the existence of intervening variables, the inconsistency in operationalising productivity and the treatment of IT investment as a “lump sum”. Grover and his collaborators noted that this could possibly be due to not using Business Process Redesign to position the organisation for assimilating the technical innovation. Their reported research was based on a survey administered to a population of 900 executives with US-based for-profit organisations in order to study the prioritisation of investments in IT.

Impacts on the Individual

Cheney and Dickson (1982) investigated the impact of introducing a Computer-Based IS on the system users’ level of information satisfaction and job satisfaction by surveying 79 users in 8 US firms. They reported that both types of satisfaction had increased upon the introduction of the system. The satisfaction was multiplied in firms who had well managed IS departments.

Following two surveys of 268 and 401 British practising managers during the periods May 1987 to June 1988, and February to November 1989 respectively, Silk (1989; 1990a) reported that *the impact of IS on users* was identified by managers, in both surveys, as the most challenging current issue of information management.

There is some indication that employees may be affected by IT in a manner related to their position within an organisation (Ryker and Nath, 1995). Ryker and Nath surveyed 101 users (primary, secondary and end-users) about the effect of IS on their jobs. They reported positive effects on four job dimensions (identity, significance, autonomy and feedback) and no significant impact on skill variety. Dearden (1983) argued that IT has not had a significant effect on top executives. Millman and Hartwick (1987) have found that middle managers perceived an improvement to their personal effectiveness attributed to office automation, which ultimately proved beneficial to their own departments and organisations.

However, Pinsonneault and Kraemer (1993) reviewed several studies with conflicting results as related to the increase or decrease of middle managers due to IT impact. They suggested an alternative which calls for considering the effects of IT on middle managers as contingent upon the centralisation of organisational decisions.

Jurison (1996) studied the temporal nature of IS benefits in a three-year longitudinal study and reported that the individual benefits occur first. The development of corporate effectiveness takes longer which implies that IS assessment should be carried out after ample time from the first introduction of the IS. Jurison explained that individual IT productivity gains vary significantly across users.

Impacts on the Industry/Market

Bakos (1987) explained that the industry-level analyses of the impacts of IT are as difficult to understand as the corresponding organisational level problem. Perhaps, Gupta (1995) was not exaggerating much when considering that Porter's (1980; 1985) work had great influence on the IS literature. This is especially true for the value chain and competitive forces. For example, inspired by Porter's discussion of the value chain, Swanson (1987) explained that the original premise of market use of ISs considers information as a physical component for each activity or product. The idea of permitting use of inter-organisational IS allows the transfer of switching cost to all users.

ISs may be used beyond the boundaries of the hosting organisation. This implies that the corporate use can not be fully understood, as Swanson (1987) pointed out, without looking at the usage within the market context. The illustration is self-evident when investigating the shared use of ISs amongst organisations (e.g. EDI) or, as suggested by a number of researchers (e.g. Parsons, 1983; McFarlan, 1984; Ives and Learmonth, 1984; Porter and Millar, 1985; Earl, 1989), as a competitive weapon. However, this could also be a result of only internal use of ISs as was the case with DEC's XCON system (Edwards, 1991). Porter and Millar

(1985) discussed the importance of the use of IT in building a competitive strategy. The opportunities opened by advances in IT extend across industries to facilitate new products, businesses and markets (Porter, 1985; Earl, 1988).

Another consideration about the market use of ISs involves the importance of analysing the use of ISs which are not owned by the organisation itself. This outsourcing is a separate topic of its own with an increasing number of studies dealing with its value to organisations in terms of judging vendors' proposals (Willcocks et al, 1996), or as a basis for establishing strategic partnering (Willcocks and Kern, 1998).

4.3.1.2 IS/IT and Corporate Performance

Improving corporate performance can be considered a good indicator for capitalising on the benefits of organisational ISs. There is a positive correlation between performance and acquiring benefits through the utilisation of those systems. Therefore, it is valuable to look at the IS literature that focuses on the relation between impacts of IS/IT and organisational performance.

Mahmood and Mann (1991) have attempted to relate comprehensive sets of IT investment measures (independent variables) and organisational strategic performance measures (dependent variables). In general, IT investment was measured by using IT expenses as a percentage of total operating expenses, or IT budget as a percentage of revenue. In realising that these measures do not capture the firm's investment in decentralisation due to increasing end-user computing and because measures show the big spenders but not the most successful users, Mahmood and Mann decided to use the ComputerWorld² measures. Those were the total IS spending compared to competitors, investment in IT as a percentage of revenues, staff and training investments and total distribution of personal computers and terminals throughout the corporation. As

² A newsweekly periodical which provides analysis on computing in the enterprise. It has an estimated audience of over 1 million business executives and is sourced frequently by the business press. ComputerWorld is widely recognised as a leading provider of news and analysis of IT.

for measuring strategic performance, their study selected six direct measures of firm performance. These were ROI, return on sales, growth in revenue, sales by total assets, sales by employee and market to book value. The study surveyed 100 firms which were known to the researchers to integrate ISs with business strategy and culture (according to ComputerWorld "Premier 100"). The conclusion was that the individual IT investment variables were found to be only weakly related to organisational strategic performance but they became significant predictors when grouped and analysed together.

Mahmood (1993) tested a modified model to the one arrived at by Mahmood and Mann (1991) on the sample firms by cluster analysis. His analysis suggested that there was a clear distinction between organisations in terms of IT investment and organisational strategic and economic performance. A follow up work, in the form of a qualitative study, was carried out by Mahmood and Soon (1991). They interviewed a sample of 31 strategic managers who had experience in using IT for strategic decisions with the intention of producing a generalisable model for testing IT impact on Organisations. Mahmood and Soon came up with a model that constituted a first step to measuring the IT impact on organisations. The work of Mahmood and collaborators was typical of the positivistic research. Causality was implicitly assumed and the investigated variables were considered a complete list which, in the researcher's view, is a major weakness. A second major problem with this kind of research is the exclusion of the organisational contextual analysis from the picture.

In a study of 33 small to medium sized firms in the manufacturing industry, Weill (1992) reported strong evidence of the effectiveness of IT investments to cut costs. However Weill mentioned that he found little evidence to link strategic IT investments to improved corporate performance. Therefore, Weill concluded that different IT investments could not be assumed to have equal effectiveness.

Klein et al (1997) were concerned with the relationship between measures of system performance and the system types. They used Zmud's (1983) typology,

which was based on Gorry's and Scott Morton's (1971) system attributes and included three types of ISs namely Transaction Processing Systems (TPS), Information Reporting Systems (IRS) and Decision Support Systems (DSS). They distributed questionnaires to 113 managers and reported the measures of the user impact were considered equally important for the three system types. However, measures of performance were thought more important to the data intensive activity of TPS. Decision and organisational impacts were perceived more important to DSS.

4.3.1.3 IS/IT and Organisational Change

It is possible, in theory, to transform organisations to become IT enabled. The vital role of IT as a major force for change was advocated by a number of researchers. Keen (1981; 1991b) was one fervent proponent of this contention. He argued that due to the growth in size, those cumbersome and bureaucratic organisations have become less flexible and responsive which makes them ill-suited to deal with the dynamics of globalisation. Nolan and Croson (1995) suggested the need for creative destruction in order to effect a transformation from industrial to information economy management principles. They proposed a six-stage model of transformation involving downsizing, balancing the interests of the stakeholders, developing a market access strategy, becoming customer driven, developing a market foreclosure strategy and pursuing a global scope. Hammer (1990) considered it essential that computers are used for the purpose of redesigning (reengineering) and not just for the automation of existing processes. The radical nature of change or reengineering as opposed to incremental improvements in current processes was also emphasised by Davenport (1993).

Venkatraman (1994) presented a framework of IT-enabled business transformation. He discussed five levels namely localised exploitation, internal integration, business process redesign, business network redesign and business scope redefinition. Venkatraman explained that these levels are not conceptualised as stages of evolution which have to be observed or crossed. He suggested that organisations should identify their transformational level and

consider potentials offered on those higher levels that might be necessitated due to competitive pressures.

4.3.2 Non-Positivist Studies

Blackler and Brown (1985: p. 217) expressed the view which epitomises the main contention of non-positive research by stating that 'In divorcing technology from its social context, the approach effectively "depoliticises" the process of technological change'. They emphasised the significance of qualitative considerations and suggested a processually oriented approach to evaluation practices. Similarly, Ginzberg and Zmud (1988) suggested that the ideal view of considering IS effectiveness as an economic construct is inappropriate because other political, sociological and miscellaneous factors are also important. On the other hand Bowleg (1976), in criticising the use of sociotechnical theory for guiding early work, pointed to the little attention paid to other relevant economic, political and legal factors as compared to the main focus on individual factors. This view is often re-iterated by researchers who subscribe to the interpretive perspective. The non-positive research therefore, steers away from prescribing an *a priori* model presuming causality. This is the kind of research undertaken by Symons (1991a) and Walsham (1993) employing Pettigrew's (1985b) contextual analysis based on content, context and process.

A set of 17 impacts was hypothesised by Carlson (1974). These included reduction of cost, improving decision making, and other possible structural or organisational impacts. Carlson's contention for the impact evaluation broadly fits with the general premise of the thesis, in effecting a contextualist analysis of the investigated phenomenon. He discussed the two systems involved as the *initiating* and the *target* and explained that they can be all or parts of the three systems of the IS, the organisation or the environment. Figure 4.6 demonstrates those three basic systems in impact evaluation.

Gurbaxani and Whang (1991) studied the impact of ISs on organisations and markets. The analysis of the impact focused on the firm size and allocation of

decision-making authority. They categorised the role of the IS, determined the effects of IT on cost structure in the firm and examined resulting changes to organisational attributes from the perspective of agency theory and transaction cost economics. Among a number of findings, Gurbaxani and Whang concluded that evaluation of ISs should take into consideration other factors such as the specific managerial contexts (e.g. business functions and organisational culture).

Figure 4.6: Carlson's View of Impact Evaluation

(Source: Carlson, 1974)



Using a grounded theory research approach, Orlikowski (1993) carried out empirical work in two organisations in the USA. She wanted to learn about the experience of adopting and using CASE (Computer-Aided Software Engineering) tools over time. The study characterised the organisations' experience in terms of process of incremental or radical change. These findings were used to develop a theoretical framework for conceptualising the organisational issues around the adoption and use of these tools. Orlikowski concluded that in order to account for the experiences and outcomes associated with CASE tools, researchers should consider the social context of systems development, the intentions and actions of key players, and the implementation process followed by the organisation. She further emphasised the importance of considering implementation as a process of change over time and not merely an installation of new technology.

McBride and Fidler (1994) focused on the need for social and contextual issues to be embedded in the evaluation process. They contended that an appropriate method would address political, social, and technical matters. Their work used an interpretive approach to justify investment in Executive Information System (EIS) for a major defence contractor.

Deitz (1994) carried out three in-depth case studies to describe and model IT investment decision making in practice. He concluded that those decisions are influenced by context-factors, organisational factors, and by the process-dimension of decisions in addition to the rational dimension (content). He then argued that content and contextual analyses should be taken into account when trying to understand and improve practice.

Walsham & Waema (1994) discussed the importance of forming a strategy for ISs in organisations, and implementing it. They describe a case study of a UK Building Society examined over a period of several years, and related the process to its organisational and broader contexts. The study provided an example of a more detailed perspective on the process of IS strategy and implementation. It used a framework for the analysis of this dynamic process based on investigating the time-varying relationship among the strategic content of change, multilevel context, and cultural and political aspects of the change process.

4.3.3 Studies of the Effect of Culture on IS/IT Diffusion

Some people argue that the technology shapes a business culture and emphasise the role of management in confronting the increasing level of fragmentation resulting from the changing circumstances due to the introduction of the new technology (FT, 24/9/98). Coombs et al (1992) argued for the linkage of information to the organisational power-knowledge relations and pointed out that culture, control and competition determine the development of IT and its applications. On the other hand, Cooper (1994) emphasised the cruciality of considering the impact of culture as a vital source of organisational inertia when looking at the implementation of ISs. Cooper explained that ignoring this issue

could result in failure of the adaptation of IT to the existing social and technical contexts.

The importance of the assessment of the goals of all involved groups with interest in the IS was realised by Land (1976) quite early. Land thought that those groups will undoubtedly have an influence on the effectiveness of the system. Myers (1994b) presented a case study using stakeholder analysis, as a viable organisational analysis approach, for investigating a successful implementation of a decision support system in the New Zealand Army. It was argued that such an approach, which requires identifying and seeking the support of stakeholders who are likely to be affected by the new system, was needed due to the high rate of failure in the implementations of ISs. Similarly, Gupta (1995) used a stakeholder analysis approach (constituting a core sponsor and 12 groups of stakeholders) to discuss the need for developing IS strategic theory that extends beyond the boundaries of firm-level analysis and contributes to understanding the industrial and social implications of IS.

With a particular interest in looking at the social and organisational issues, Barrett and Walsham (1995) examined the process of developing IT for business innovation within a Jamaican insurance group. In addition to discussing particular issues related to developing ISs and learning and control, they reported that at the initiation stage the leadership were innovative in utilising knowledge about business and organisational learning but later did not account for cultural characteristics. This was attributed to lack of evaluation of broader social processes in the group's cross-cultural joint venture.

Weber and Pliskin (1996) investigated the relationships between integration of IS, corporate culture and overall effectiveness in the context of mergers and acquisitions. The survey covered 69 Mergers and acquisitions. While emphasising the necessity to control for IT intensity and organisational cultural differences between the merging companies, they found a positive relationship between IS integration and effectiveness.

Kirlidog (1996) carried out an extensive multiple case study research in four Turkish organisations with the aim of studying Executive Information Systems (EIS) applications. The conclusion was that EISs were designed like any other ISs and those applications in Turkey were still in the infancy stage. Kirlidog attributed this to the inexperienced managerial practices in the country and emphasised that the problem is not with technical maturity but rather the process of cultural transformation.

Wang (1997) explained that the flow of information does not in itself make an organisational culture less hierarchical and more open but rather the cultural decision to democratise which makes more democratic information flows. Khalil and Elkordy (1997) argued that the difference in social, economic and cultural characteristics between developed and developing countries makes it hard to generalise empirical findings resulting from studies in either of the two Worlds. Khalil and Elkordy studied the relationship between user's age, tenure in the job, organisational level, education training, duration of system use and involvement in system development (personal and situational factors: the independent variables) and IS effectiveness as measured by user satisfaction and system usage (the dependent variables). The survey involved 120 managers in 22 Egyptian banks. They reported positive correlations between tenure, user involvement and user satisfaction and negative correlations between age, organisational levels and system usage.

Ng and Ramiller (1997) emphasised the importance of considering cultural/contextual factors in understanding the diffusion of IT. Basing their work on Hofstede's widely known cultural framework (discussed in chapter 2), they surveyed 21 business schools (as key gateways for introducing technology into societies) in 21 different countries which spread across the five continents. IT diffusion was investigated using 30 previously applied IT attributes and responses were recorded on an adoption continuum. They reported possible links between specific values and organisational competitiveness. The cultural factors

were found to play a valuable role in explaining varying international patterns of IT diffusion.

Tolsby (1998) studied the introduction of IT within the Norwegian army. He explained how the combination of the culture and the system design, which spliced jobs and deskilled workers, helped uphold old working ways that allowed easy substitution of IT personnel. This implied that the new system could not alter the organisational culture to make it more adoptive. A major contention was that culture, manifested in the formal and informal army systems, constituted an obstruction to successful adoption of IT. This was further indicated by the fact that ordinary users had minimal influence on the working order of the IS as they were barely represented on the IT steering committee.

4.4 Jordanian Studies

The number of relevant studies carried out in Jordan has been quite limited. One main reason could be due to the lack of researchers in Jordan who are qualified to carry out such studies in the IS/IT field.

Jordanian researchers have paid more attention to the importance of corporate performance. For example, Awamleh (1990) evaluated the performance of 5 Jordanian public industrial companies by distributing 20 questionnaires in each of those organisations. He reported that there was no clear understanding of the evaluation of corporate performance, no common techniques for the evaluation, the use of reports was the commonest way to carry out the evaluation. In addition, Awamleh reported that the evaluation of corporate performance was dependent on profitability and productivity measures. Similar to the majority of Jordanian studies the rational model was dominant as the pattern of measurement of performance was economically and financially inclined. When respondents were requested to suggest ways of improving performance, the focus was on managerial issues and little attention was paid to the importance of information.

Makhamreh (1986) studied the factors affecting corporate performance in 55 Jordanian companies for the years 1980- 1982. He concluded that size of total assets, number of stakeholders, size of returned earnings and the corporate debt equity ratio did affect corporate performance while the empirical evidence showed only weak correlation between stock prices and profitability. The most relevant point to this thesis is Makhamreh's conclusion that organisational and leadership factors played a prime role while the environmental factors were almost insignificant. This surprising finding may be due to the use of a causal model linking relationships between corporate performance and other factors. Those environmental factors have a subtle and surreptitious influence that is difficult to gauge by merely asking employees for their subjective opinions. Al-Tarawnih (1996) measured the influence of some factors (structure, organisational climate, technology, size and automation) on the corporate performance of the Jordanian industrial organisations. He found a significant relationship between performance and automation and recommended paying more attention to the potential role of the organisational culture. Similarly, Obaidat (1991) investigated the relation between size and performance of Jordanian manufacturing public share-holding organisations. He could not confirm a positive correlation in the originally hypothesised relation between size and performance and remarked that the larger companies had higher returns although the smaller ones outperformed them in terms of the quality of work.

Al-Dahan and Makhamreh (1990) reported some general findings related to the intangible benefits of computers. They surveyed 80 respondents from 15 Jordanian banks in order to investigate the impact of computerisation on the work activities. One of the reported results was that information improved work, control and supervision functions. Furthermore, they concluded that computerisation did not affect stability or lead to general unemployment and had no effect on stability of work or satisfaction of employees.

Shannak (1994) studied the relationships between the use of MISs and corporate performance in Jordanian public-shareholding companies. The MISs were

measured by using a wide range of surrogate measures (environmental, organisational and technical). He found that only 25 percent of the researched organisations had a department for their MIS. In addition, Shannak reported that organisations paid inadequate attention to the usefulness of those systems. As for the relationship between the MIS and the corporate performance, it was concluded that there was no significant correlation.

Al-Farhan and Al-Tarawnih (1996) tested a set of hypotheses related to the availability and contribution of control and information systems in a total of 223 private and public Jordanian organisations. They concluded that those systems, which contributed to higher levels of achievement, were mostly available in private organisations.

4.5 Summary

This chapter has basically presented a review of some of the work that has been undertaken by researchers in the particular research area. An explanation of the conceptual pluralism related to how researchers have looked at the problem area was also given. In the process of attempting to organise a unified view for looking at the impacts of ISs, it was yet another pondering point to heed and appreciate Checkland's and Holwell's (1997) call for the necessity of carrying out conceptual cleansing in the IS field.

Part II with its two chapters 3 and 4 has presented a broad survey of the extant literature as deemed relevant to building the basis for the background and focal theory of the thesis. Having paved the way guided and coached by the lit candles of prior research, the following chapter 5, being the first in part III [Researcher's Methodology], will proceed to establish the theoretical design of the research project. The design will make use of surveyed literature and presents the research frameworks and theoretical basis.

PART III
RESEARCHER'S METHODOLOGY

Chapter Five

THEORETICAL DESIGN

5.1 Introduction

The thesis has so far included a general introduction and literature review. This was primarily given to locate where this piece of work might fit, and how it may contribute to the ongoing research in the field of IS/IT. The present chapter establishes the research theoretical foundations by initially explicating the theoretical basis which is made up of a number of propositions. It proceeds to propound the use of an organisational and an analytical framework for data collection and analysis. In addition, it explains the methodological perspective as an essential underpinning for each piece of research.

5.2 Theoretical Foundation

Research may be pursued to test or produce theories. However, theory, as Walsham (1995b) after Eisenhardt (1989), has remarked, is also needed initially to guide the research design and data collection, as well as for the iterative process of data collection and analysis. Reification of phenomenal abstractions, as related to the phenomena under investigation, is considered a pre-requisite for acquiring a reasonable degree of understanding of that phenomenon. Metaphorically speaking, it is more like an investigatory anatomical dissection in order to reach the internal organs and perform a close physical inspection and examination. The means to achieving an equivalent parallel is discussed here. This section therefore explains the use of theory by describing the theoretical basis and the research frameworks.

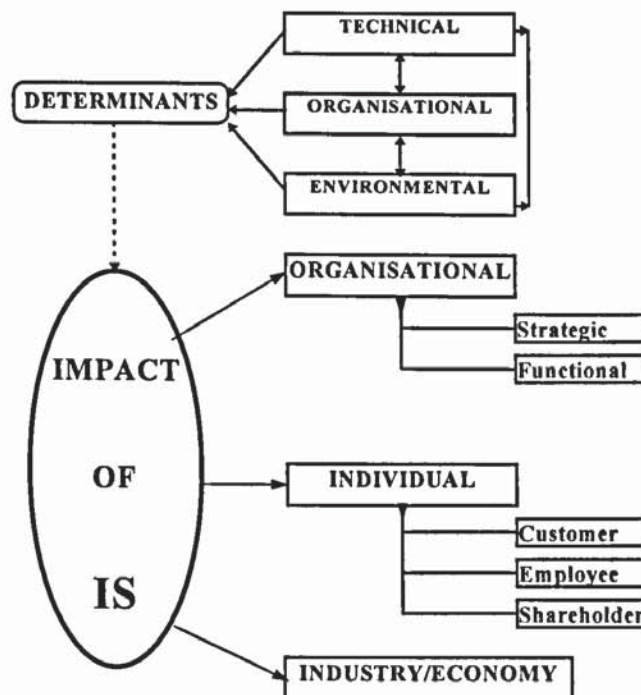
5.2.1 Theoretical Basis

A thesis has to present the theoretical premises of the research as well as the justification of the adopted epistemological position. Contrary to a positivist research which is more deterministic and based on hypothesis testing, an interpretive piece of work does not presume causality. The premises are made up

of assumptions and suppositions that helped the researcher make focus by delineating the phenomenon of the use of ISs and demarcating the boundaries of the inquiry related to the role and value of corporate ISs.

Swanson (1987) proposed a typology for basic research questions in order to classify and relate research on information systems in organisation theory. The researcher draws on that work to propound a general classification for the hypothesised impacts and determinants of ISs. This is illustrated in figure 5.1.

Figure 5.1: General Hypothesised Impacts and Determinants of ISs



This representation forms the foundation of the theoretical basis that is used to look at the role and value of ISs in organisations. However, the thesis is limited to a focus on the organisational impacts, with the individuals as pillars for holding up the roof of corporate mission and objectives. Studying impacts of ISs on the industry and economy requires a lot more efforts due to the complexity of the topic. One has to look at all sectors with a multitude of organisations and this demands the dedication of a whole team of researchers in order to have a worthwhile study. This point is also raised in chapter 10 as a possibility for future research.

Furthermore, Swanson (1987) included a comprehensive list of determinants and effects of the organisational use of ISs. This list, which was presented in table 4.1, served to guide this research. It has also been used by Wijnhoven and Wassenaar (1990), in addition to Markus's (1984) system types, and Mintzberg's (1979; 1983; 1989; 1991) organisational types, as the variable groups for their model, in order to study impacts of ISs in 11 Dutch firms.

The theoretical basis for the research is summed up in the following points:

- 1- IS's role and value are best considered through an integrated scheme, combining determinants and impacts as they are inseparable for gauging the extents of those possible impacts. As one example, Weill and Olson (1989) explained that factors like the implementation procedure, the corporate culture and the skill of management determine the effectiveness of the conversion of IT investment into useful output.
- 2- The proposed determinants are of three different types, namely: technical (system and people), organisational (inner context containing economic, political, social and cultural factors) and environmental (ecological factors of the outer context).
- 3- General impacts of IS could exist on three different levels namely organisational, individual and industrial/economic. The thesis is mainly concerned with organisational impacts, but considers effects on individuals as directly relevant to the organisational work. Looking at ISs' impacts on industry/economy requires more consolidated efforts. The coverage is beyond the boundaries of this thesis.
- 4- Organisational impacts can be classified as strategic or functional. The latter one focuses on the running of business on a day to day basis. On the other hand, the strategic considers issues related to survival and prosperity of the organisation. The investigated issues comprised a wide list. This included Swanson's effects, Carlson's (1974) hypotheses on impacts, Leavitt's and Whisler's (1958) impact implications as per their prognostications, and draws on the works

of many other ISs researchers (e.g. Bjørn-Andersen et al, 1986; Federico et al, 1985; Ein-Dor and Segev, 1982).

5- Impacts of ISs on individuals may affect three categories which are customers, employees and shareholders. The researcher sought to investigate the first two and not the shareholders except for reflections based on the perception of employees. It was considered necessary to limit the scope of coverage in order to make a focused contribution rather than a broad but shallow coverage.

5.2.2 Organisational Framework

There has already been a discussion on organisations in section 3.2. This topic is mentioned here in the context of discussing the importance of deciding what is an organisation. The choice governs, to a great extent, how organisational phenomena are evaluated. For instance, if an organisation is considered a rational entity with the sole purpose and intention to maximise profitability (a goal-seeking machine to use the term of Checkland and Holwell (1997: p. 77)), then a corollary deduction may propose achieving this, for example, by reducing cost and/or increasing profit margin. In real life, things do not simply work in that ordered manner. In principle, organisations need to make profit but most importantly they have to survive in order to continue making profit. Enforcing a mode of thinking based on such a tenet of rationality will consequently lead to unilateral adoption of economic criteria for investigating organisational phenomena. This is a highly debatable point which is far from being the generally accepted norm. The researcher does not support the contention that organisations are rational entities because they have to thrive in turbulent internal and external environments. They are open and vulnerable systems.

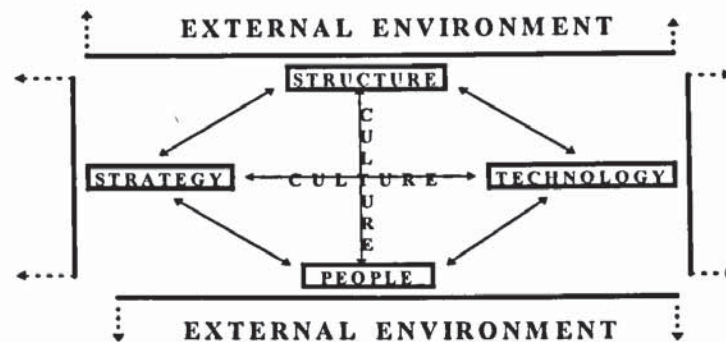
As stated earlier in chapters 1 and 3, the researcher assumes that an organisation is a social system. It has goals and is accountable towards its employees, in as much as they are committed to fulfilling its strategic objectives. Organisations are bodies without souls, if it was not for the 'docile'¹ human workers. The

¹ This term was used by Foucault (1979) to signify that people, as the 'docile bodies', do what there are asked by their superiors without much questioning.

organisational design is an emergent process (Markus and Robey, 1988). It is a result of complex interactions and not simply a predictable interaction between technological and social environments (Lucas, 1994).

The adapted organisational framework draws on the work of Leavitt (1965), which looked at organisations as multivariate systems with highly interdependent variables, and on the MIT'90 framework (Scott Morton, 1991). Both of these works have already been discussed in chapter 3. The basic premise is based on the interdependence of variables. This implies that any change to one variable will have its repercussions and inevitably effect the remaining variables. The dimension of 'people' or actors was used as had been suggested by Leavitt. Those actors are either managerial or non-managerial. Both of the two types play their different but equally important roles in the organisation.

Figure 5.2: The Organisational Framework



The organisation, as a *culturally interacting open social system*, is represented in figure 5.2 by its four dimensions. The borders, with their open corners, indicate the inseparability of the inner and outer contexts. *Culture*, the 'silent language' (Hall, 1960) and the 'software of the mind' (Hofstede, 1991), is depicted in a way to signify that it is not just a fifth organisational dimension but a medium through which interactions take place. In a positivist view it would be considered a moderating, as well as an intervening variable. This did not appear in Leavitt's or Rockart's and Scott Morton's (1984) models but was included in the MIT'90 model. However, the MIT'90 model included culture in the organisational ellipse

(as illustrated in figure 3.4) and exhibited technology and strategy as if they were exogenous factors.

Complementing the previous discussion on metaphors as presented in chapter 3 and for the purpose of shedding extra light on the cultural specificity of the impact of ISs in organisations, the researcher draws on the work of Stamper. Stamper (1988) based his analysis of the cultural consequence of adopting new innovations on Hall's (1959) framework. Hall proposed ten categories for the classification of culture as the means for conveying the silent message. Similar to what is said later about the use of the analytical frameworks in this research, these categories for the corporate culture, as illustrated in table 5.1, were used as guidance for data collection and analysis.

Table 5.1: Cultural Categories and Means

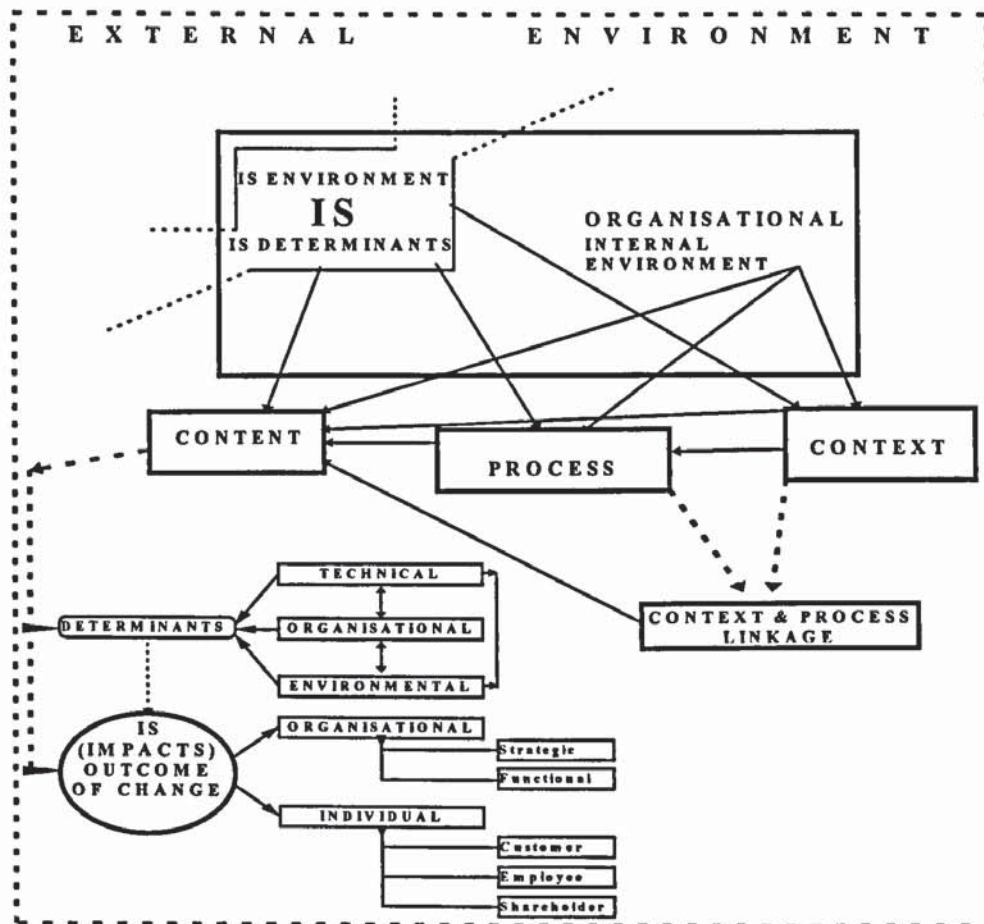
CATEGORY	CULTURAL MEAN
Interaction	Language, vocal inflections as means of communication, posture, gestures,...etc.
Association	Community, class, caste, roles, organisations, teams, hierarchy,...etc.
Subsistence	Physical livelihood, eating, excretion and (indirectly) income, working for living.
Bisexuality	Differentiation of sexes, marriage, family.
Territoriality	Division of space, where things go, where to do things, ownership.
Temporality	Division of time, when to do things, sequence duration, cycles.
Learning	Education, training, rearing, what gets taught or learned.
Play	Recreation, fun games, art, sport, what is amusing.
Defence	Protection against the elements, other groups, disease and the supernatural.
Exploitation	Tools, technology, materials and their uses, skills.

The organisational framework was *situational* in considering four main broad dimensions namely structure, people, strategy and technology. It was initially intended for the sole purpose of *setting the scene* for the research.

5.2.3 Analytical Framework

The adapted analytical framework serves to provide a deeper level of detail because of its specificity. It was intended to give guidance for initial data collection and later analysis. The analytical and organisational frameworks complement each other but they are not literally integrated.

Figure 5.3: The Analytical Framework



The focus on the research problem came through the use of the analytical framework under the *content* branch. This has also covered the ideas upon which the theoretical basis was built. Therefore, the content has encompassed determinants and outcome of IS impacts as they were hypothesised and demonstrated in figure 5.1, with the exception of impacts on the general industry and economy. Consequently, the researcher envisages that *the analytical instrumentation and referencing of the research is best understood by intermarrying the*

organisational and analytical frameworks. In essence, this was how data collection started. The focus was initially on the organisational dimensions and moved out, depending on institutional findings, to cover other aspects which are encapsulated in the analytical framework as illustrated in figure 5.3.

Table 5.2: Walsham's 'Organisational Change and IS' Framework
(Source: Walsham, 1993)

Key Components of Change Framework	Associated Conceptual Elements
Content	Organisation-products/processes/systems Information Systems-hardware/software/systems
Social Context	Web models-social relations/infrastructure/history Multi-level contexts
Social Process	Culture-subcultures/multiple meanings Politics-control and autonomy/morality
Context/Process Linkage	Structuration theory-action and structure duality IS and modalities-embody interpretive schemes -provide co-ordination and control facilities -encapsulate norms

Roots and Influencing Factors

Continuing the discussion which was initiated in the 'theoretical basis' subsection (5.2.1), Walsham (1992; 1993) suggested a comprehensive framework which can be used to study a phenomenon with some contextual analysis. His work drew on the work of others (e.g. Giddens (1984); Kling and Iacono (1989); Kling and Scacchi (1982); Pettigrew (1987)). The key components and associated conceptual elements of Walsham's framework are shown in table 5.2.

The researcher, after Walsham, argues the need for an initial framework to guide the research. It draws on Walsham's and Pettigrew's work and uses an analytical framework (figure 5.3) which, as stated previously, has provided the complete basis for data collection and analysis. The method is basically contextual, as recommended by Pettigrew (1985a; 1985b; 1987), and contains elements that are considered crucial to sketching a complete organisational picture (for preparing the organographies) where the phenomenon of the use of ISs took place. Table 5.3

illustrates the elements of Pettigrew's approach which is, as Pettigrew stated 'contextualist in character'.

Table 5.3: Pettigrew's Contextualist Approach

CONTENT	Economic, Efficiency, and Effectiveness (Including organisational effectiveness and contribution to business strategy)	
	MEANING	Covering particular area of transformation under examination (Opportunities presented and potential constraints on its application)
CONTEXT	INNER	Structure, Corporate culture, and Political context
	OUTER	Social, Economic, Political, Competitive environment
	MEANING	Looking at history, infrastructure (physical, financial, human resources and capability of access to these), informal procedures, information flows, and stakeholder perspectives
PROCESS	Actions, Reactions, Interactions from various interested parties in change process	
	MEANING	Change processes can be identified and studied only against a background of structure or relative constancy. Processes are constrained by structures and shape structures

The analytical framework is illustrated in figure 5.3 and the explanation for the above research frameworks (organisational and analytical) is provided next.

Elements of the Framework

The underlying assumptions of the analytical framework advocate that an organisation, as an open system which has internal and external environmental linkages (Katz and Kahn, 1966), can be described based on its four interdependent dimensions as shown in figure 5.2. Leavitt (1965:p. 198) stated that 'at least four interacting variables loom especially large' and emphasised that 'Approaches to change provide a kind of sharp caricature of underlying beliefs and prejudices about the important dimensions of organizations'.

There are a plethora of studies covering the interrelationships between organisational dimensions but researchers have mostly opted to narrow focus and look at limited interactions. For example, one of the classic studies that looked at the relationship between strategy and structure in large American

industrial organisations was that of Chandler (1962). He concluded that structure changed upon strategic modifications until an optimal situation for supporting the firm's strategy was reached. Chandler also studied the role of employees in achieving the ideal fit between structure and strategy. There are other examples that were concerned with the role of technology in general (e.g Woodward, 1965; Blau et al, 1976) and that of the interaction of information technology with the factors of the internal environment in particular (e.g Bjørn et al, 1979; Robey, 1981; Parsons, 1983; Barley, 1986; Bjørn et al, 1986; Benjamin and Levinson, 1993; Brynjolfsson et al, 1994).

Strategy contains the organisational tasks or organisational *raison d'être* as referred to by Leavitt (1965), including the large number of subtasks which may exist in the organisation. The tasks are carried out to achieve the organisational objectives that constitute the actual *raison d'être* of the organisation. The people are the actors who perform tasks and bring life into organisations. On the other hand, structure as used in the organisational framework implies the formal configuration of the organisation. It includes the systems of communication, authority and work flow (Leavitt, 1965).

A number of researchers agree that financial institutions are critically dependent on ISs for their daily operations and that IT constitutes their core technology (e.g. McFarlan and McKenney, 1983; Porter and Millar, 1985; Broadbent and Weil, 1993). IT is a primary constituent of modern information systems which in its physical characteristics includes hardware and software. This technology is reified by its application to business processes, gathering data and creating information that is valuable to the organisation (Daniels, 1994).

Analysing impacts of ISs in organisations inherently encompasses the investigation of organisational change. This is due to the fact that impacts are considered as the discrepancies between previous and existing states of an entity or rather what it was before and what it has become. The study of change in organisations should not be preoccupied with the intricacies of narrow changes

but ought to provide a holistic and dynamic analysis of changing (Pettigrew, 1987). This view is shared by many researchers who subscribe to *the rich picture tenet* of the need for in-depth analysis of organisational change (Checkland, 1981; Robey, 1987; Orlikowski, 1991; Orlikowski and Robey, 1991; Symons, 1991a; Walsham, 1993; Avgerou and Doukidis, 1993; Robey and Azevedo, 1994; Smithson, 1994; Serafeimidis and Smithson, 1996). As for IT and change, some researchers argued that IT has not always been associated with organisational change (Robey and Azevedo, 1994).

Walsham (1993) was referring to the research of Pettigrew (1985a, 1987, 1990) and others on organisational change when stating that its main thrust calls for the continuous involvement of the interplay between ideas about the content, context and process of change as a necessity for producing theoretically sound and practically useful research. In the light of the latter view, which is shared by the researcher, the thesis proceeds with the explanation of the remaining elements of the analytical framework.

Content

This covers the changes that happen to and as a result of the use of ISs in the organisation. Walsham (1993) included changes to products, processes and systems as well as the hardware, software and operating systems. Pettigrew (1987) emphasised the coverage of the particular area of transformation under investigation (in this case it is the role and value of IS) and pointed to economic, efficiency and effectiveness issues related to IS and the organisation. As shown in figure 5.3, the determinants and outcome of IS branch out from the content.

Process

This is concerned with the actions, reactions and interactions of interested parties. Upon the introduction of ISs, many things happen at the different stages. Those things have great influence on possible impacts of the IS as well as influencing the corporate operations and interactions. Walsham has placed great emphasis on the social aspects and called this element the 'social process'. The ensuing result of considering action, reactions and interactions of interested parties is to

understand the cultural and political perspective on the organisational change linked to the IS. This covers interactions between subcultures and the multiple meanings ascribed to the events and actions. In addition, it emphasises the involvement of the IS in organisational control and power.

Context

This covers the IS and organisational contexts. Pettigrew (1985b; 1987) discussed the inner context as made up of structure, corporate culture and political issues. He referred to the social, economic, political and competitive environment as the constituents of the outer context. The concern here is with the organisational infrastructure, history, and working orders. The context is supposed to cover the nurturing environment of the IS. Walsham's representation of social context draws on Kling's and Scacchi's (1982) *web models'* definition of the social context for computer-based technologies. Kling (1987) explained that the web models take account of the social relations between participants who can influence the work of ISs, the infrastructure available for support and the history of commitments in the development and operation of those systems. Walsham encouraged the incorporation of elements of broader contexts where feasible because of their contribution to social analysis.

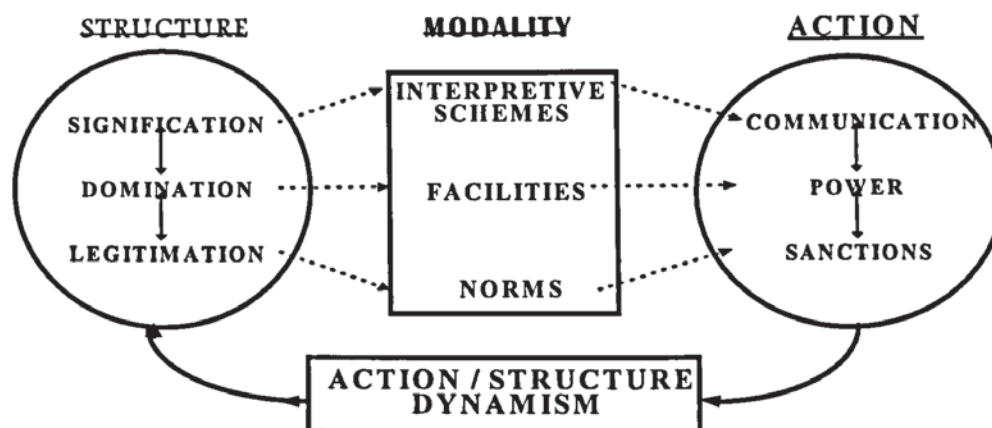
Context and Process Linkage

Pettigrew (1987: p. 657) submitted that the analysis of strategic change implies the inevitability to manage the process and context as a direct result of formulating the content of change. One can readily add that the need also arises to manage the linkages between the elements. Content, process and context have already been discussed. Walsham has conceptualised the linkage between process and context through using structuration theory which he described as 'a subtle and intricate approach to the interpretation of social systems' (Walsham, 1993: p. 60). Giddens (1984) stated that social theory is primarily concerned with the illumination of the concrete processes of social life. Giddens's structuration theory is discussed next as a prelude to its application in analysing the case studies of the research.

Giddens Structuration Theory (GST)

Giddens (1976; 1984) proposed his structuration theory as a good sensitising device rather than a methodological framework. He did not wield a methodological scalpel by approving or disapproving of research techniques but stressed the importance of knowledgeable actors, the unintended consequences of action, the distinction between practical and discursive consciousness and the analysis of unconscious as a type of hermeneutics (Symons, 1990a). Walsham and Han (1991) considered GST as a meta-theory which can be used to locate, interpret and illuminate other approaches. A brief summary of the theory is given here as the discussion of the social and process linkage calls for this clarification. This is followed by some examples of the use of GST in the IS literature.

Figure 5.4: The Process of Structuration



GST is concerned with the duality of structure. It proposes a formulation of a coherent account of the human agency and the demands of structure and posits that the existence of structural properties is dependent on a chronic² reproduction of social conduct across time and space (Giddens, 1984).

According to GST the human agents draw on social structures in their actions, which in turn produce and reproduce those enabling as well as disabling social

² This implies a tenacious, persistent or ingrained impulse.

structures. Those social structures form the medium for expressing and realising human intentions and actions. Therefore, it is the medium and outcome of human action. This explains Giddens's (1982) comment that human beings actively shape the world they live in while they are simultaneously being shaped by the world. He stressed this point further when endorsing Marx's oft-quoted phrase 'Men make history, but not in circumstances of their own choosing' and explained how Marx's 'innocuous pronouncement' disclosed a diversity of complex problems for social analysis (Giddens, 1984: p. XXI).

Table 5.4: The Giddensian Terms of Structuration

TERM	IMPLICATION
SIGNIFICATION	A social structure that is built around the production and reproduction of meaning by human communication through interpretive schemes
DOMINATION	A social structure resulting from the utilisation and exercising of power by drawing on available resources
LEGITIMATION	A social structure that is maintained or modified through sanctioning human actions by drawing on the norms which facilitate the expression of rights and obligations of human interactions
INTERPRETIVE SCHEMES	The stocks of knowledge that are drawn upon for the production and reproduction of meaning by the human action of communication
FACILITY	These cover the available resources or organisational capabilities that are used in a deliberate manner to exercise power which creates, modifies or reinforces the structure of domination
NORM	These form the standards of morality or organisational rules and conventions that are drawn upon for sanctioning human actions and conducts which produce and reproduce the structure of legitimation
COMMUNICATION	A type of human action that produces or reproduces the social structure of signification by drawing on interpretive schemes
POWER	A type of human action that creates, modifies or reinforces the structure of domination by drawing on available organisational facilities
SANCTION	A type of human action which creates or maintains the structure of legitimation by drawing on the standards of morality which demonstrate the rights and obligations of humans in their interactions

To illustrate the Giddensian view of social structure, Orlikowski (1988) gave the example of the organisational structure. If employees were subscribing to the hierarchic norms and rules of legitimate authority then they would be enacting the bureaucratic structure which would not exist without their compliance. Therefore, organisational structures have, as it were, the ability to elicit compliance and conformity even when no material constraints exist to attest to the power of those abstractions (Orlikowski and Robey, 1991). Giddens referred to structure as having a *virtual existence* or *memory traces in the human mind* and

discussed three dimensions of structure namely signification, domination and legitimation. He considered that those structures interact with the human actions of communication, power and sanctions, through three corresponding modalities which are interpretive schemes, resources and norms. Figure 5.4 depicts Giddens notion of the duality of structure. The dimensions are shown as separate nodes but this is merely for analytical convenience as they are typically inextricably interlinked. In addition, table 5.4 serves to explain the meaning of the Giddensian terms as used in figure 5.4.

As alluded to earlier, Giddens explained that humans are more knowledgeable than 'they can say', thereby emphasising their *practical* consciousness rather than their *discursive consciousness* which implies their ability (or inability) to explicitly describe their actions and motivations (Walsham and Han, 1991). This means that humans may not be aware of their 'constant state of reflexive monitoring' for potential change or Giddens's explanation of hypothesising the existence of those types of consciousness. Walsham (1993) pointed to another crucial structuration concept of *routinisation of social activities* and its significance in explaining the 'fixity' of social conduct and the corresponding stability of organisations. Furthermore, our deliberate or intentional actions which draw upon those modalities to produce and reproduce social structures embed no guarantee that there will not be some unintended consequences. On the contrary, some results of certain actions might diametrically oppose or be the adverse of the originally intended consequence.

GST was used in IS research to look at the differing influence of technology (Computer Tomography Scanners) on outcome due to the different social structuring in organisations (Barley, 1986). Orlikowski (1988) used structuration to analyse the social processes involved in the development and use of Computer-Aided Software Engineering in one American consultancy organisation. Orlikowski's work was complemented with a follow up structural analysis of the utilisation of information technology in organisations (Orlikowski and Robey, 1991). Orlikowski and Robey were mainly interested in investigating

interactions of human actors and social structures during IS development and developed an agenda of research based on structurational models. In a later publication Orlikowski (1992) distinguished between the material nature of technology (constructed) and the human activities related to the design and use of the technological artefact (enacted). She proposed a structurational model of technology that advocated the recursive notion of *duality of technology*. In addition to the above referenced works, other organisational researchers have used GST to analyse their organisational processes (see for example Manning, 1982; Riley, 1983; Smith, 1983; Roberts and Scapens, 1985; Willmott, 1987; Roberts, 1990).

5.3 Methodological Foundations and IS/IT Research

Research is carried out to explore and explain in order to make sense of a chosen topic which will ultimately contribute to the general knowledge. There are different paths that can lead to the aspired objective and because each of us is unique, differences of views are inevitable.

There is no agreement amongst researchers regarding a common understanding of research terminology. The controversial disagreement extends to the general paradigmatic and methodological definitions. This section will present a brief explanation of some of the methodological terms, namely methodology, paradigm, approach, and method. It will serve as a foundation for discussing the researcher's methodological perspective which is presented in the following section 5.4.

Methodology

In principle, the researcher understands that methodology includes the theoretical design, the data collection design and the analysis of data. It is a rather overarching term that encompasses paradigm, approach and method. This is conceptually similar to what has been suggested in the IS literature. For example, Elliot and Melhuish (1995: p. 88) used the Oxford Press *Dictionary of Computing* definition of methodology as 'a coherent set of methods used in carrying out some complex activity' and explained that it could be improved by incorporating

philosophical and conceptual elements. In addition, Remenyi and Williams (1995), after Leedy (1989), considered methodology as the procedural framework for conducting research which serves as a guideline and not a prescription. Introna and Whitley (1997: p. 31/32, italicised letters and words as were included in the original) have argued against 'method-ism' and defined methodology as 'a structured set of *techniques* and *tools* that are used to tackle a particular problem'.

There seems to be a basic agreement that methodology is what is involved in preparing to execute the research and concluding with the results. The confusion stems from the different uses of the term in contrast to the conceptual understanding as explained in the previous paragraph. Watson et al (1995) suggested that applying methodology is a hermeneutic process. They explained that the meaning of methodology results from its constitutive role and the experience of the practitioner. Checkland and Scholes (1990) expressed the view that methodology can be considered as a way for bridging the gap between theory and practice.

Stamper (1988) pointed to the confusion of mixing method and methodology in the IS/IT field. He suggested the use of methods as specific ways for approaching and solving problems, while methodology, Stamper remarked, ought to be used for comparing and critiquing methods. Burrell and Morgan (1979) explained that ontological, epistemological and human nature issues have direct implications of a methodological nature. These implications have consequences which affect how to investigate social phenomena and obtain knowledge.

Paradigm

Kuhn (1970) considered a paradigm to be more than data and theories; a template for explaining new discoveries. The oft-cited work by Burrell and Morgan (1979: p. 23) defined the notion of paradigm using 'meta-theoretical assumptions which underwrite the frame of reference, mode of theorising and *modus operandi* of the social theorists who operate within them'. Those assumptions are shown in figure 5.5 in terms of the subjective-objective dimension. Hirschheim and Klein (1989:

p. 1201) considered paradigm as 'The most fundamental set of assumptions adopted by a professional community that allows its members to share similar perceptions and engage in commonly shared practices'.

**Figure 5.5: A Scheme for Analysing the Social Science Assumptions
(Source: Burrell and Morgan, 1979)**



Burrell and Morgan explained that the term paradigm was intended 'to emphasise the commonality of perspective' amongst relatively agreed researchers. They classified four distinct paradigms for the analysis of social theories, with mutually exclusive views that generate some fundamentally opposing theories. These were the 'radical humanist', 'radical structuralist', 'interpretive' and 'functionalist'.

The radical humanist assumes the social construction of reality which is tied to a pathology of consciousness in which humans become prisoners in their own socially created world. The radical structuralist, on the other hand, conceives a materialist social world with hard existence that is independent of any social construction. The interpretive paradigm assumes the social construction stance and calls for a deconstruction of the phenomenological processes in order to investigate the intersubjectively shared realities. The functionalist paradigm

premises an external reality and assumes, in contrast with the interpretive paradigm, that objectivity is attainable.

Other researchers offered different paradigmatic classifications. Lincoln and Guba (1985) discussed paradigmatic eras as pre-positivist, positivist and non-positivist. They described the most suitable naturalistic enquiry as one that presumes an ontological multiple realities stance, axiologically value laden, epistemologically does not separate between observable and observed and submits that only ideographic statements are possible. Based on three of Burrell and Morgan's four underlying assumptions of ontology, epistemology and methodology, Guba and Lincoln (1994) presented a four paradigms classification including positivism, postpositivism, critical theory and constructivism. On the other hand, Hirschheim and Klein (1989) have adapted their four information systems development paradigms from Burrell and Morgan (1979). Their paradigms were called functionalism, social relativism, radical structuralism and neohumanism. Minichiello et al (1990) made the paradigmatic comparison based on conceptual and methodological categories between positivist and anti-positivist (interpretivist, symbolic interactionist or social action) through comparing the characteristics of quantitative and qualitative research. Similarly, Easterby-Smith et al (1991) considered a division into two paradigms namely positivist and phenomenological.

Researchers like Burrell and Morgan have argued for the incommensurability of paradigms involving separate development and application. This position ignores the multiplicity of perspectives. Lee (1991) argued for the integration of the positive and interpretive paradigms. A third alternative which does not accept the clear distinction or integration of paradigms calls for crossing (Schultz and Hatch, 1996) or triangulating positive and interpretive paradigms (Orlikowski and Baroudi, 1991).

The researcher supports the choice of considering the existence of two broad paradigms regardless of the name because they are seen as two with variations.

One can then proceed to discuss the variations of those paradigms (or special cases) and how they can be applied in practice. This is in line with Easterby-Smith et al's (1991) proposition. In principle, a positivist (e.g. Burrell's and Morgan's functionalist paradigm) presumes a causality as *a priori* or attempts to find it. The other paradigmatic position would be the non-positivist (interpretive) that calls for a socially constructed meaning of multiple realities. Positive work is characterised by the hall-marks of the traditionally defined scientific research.(e.g. causality, value-free, statistical generalisability, refutability,...etc). Non-Positive research, however, is seen as facilitating in-depth work which permits studying the phenomenon within its context. Naturally, there are proponents of each of those conflicting methods. Further clarifying details related to the application of paradigm to this research are provided later in this chapter.

Most of the IS research that has already been carried out in the USA and to a large extent world-wide was positive in nature and dominated by the positivist paradigm. Orlikowski and Baroudi (1991) reported that the publications in the field were mostly positivist or quantitative. However, interpretive research is burgeoning and becoming widely accepted as a necessity for advancing the field of IS/IT. Walsham (1995a) explained that interpretivism is a strand of research in the IS/IT field. He pointed to the importance of this epistemological stance and indicated that interpretive research is gaining ground.

Approach

This is considered as the way in which the researcher tackles and presents the settings of the research in a reflective manner. It is not a generally acknowledged term. In fact, contrary to this view, Introna and Whitley (1997) considered approach as a bigger term which guides the shape of methodology by describing the underlying philosophy. Cavaye (1996: p. 227), after Galliers (1992) and Weick (1984), defined research approach (or strategy) as 'a way of going about one's research, embodying a particular style and employing different methods'. Denzin and Lincoln (1994) mentioned a mix of types under the heading of research strategy. The researcher does not agree with their view because of the general

inclusion of some paradigms, approaches and even methods under the same heading. However, their use of strategy seemed synonymous with what the researcher refers to as an approach. Lee (1994) discussed the use of interpretivism as an approach for studying e-mail as a medium of rich communication. Examples of approaches would be ethnography and grounded theory. Baskerville and Wood-Harper (1996) explained that action research can also be a useful approach in the IS discipline.

It is important to note that even within an approach like ethnography, there are many variations and adaptations by different researchers. In this regard, Checkland's Soft System Methodology would also be considered an approach, not a methodology. Philosophically, Checkland (1981) considered SSM as a model of social reality in the phenomenological tradition. For Checkland methodology is an intermediate status containing elements of the 'how' or technique and of the 'what' or philosophy.

Method

This is the way of executing the approach. Harvey and Myers (1995: p. 13) stated that research methods are 'the means by which knowledge is acquired and constructed within a discipline'. The IS literature includes an extensive coverage of a number of methods which could be used for empirical research. (c.f Bjørn-Andersen and Davis, 1988; Nissen et al, 1991). Avison and Myers (1995) explained that researchers have considered a number of methods as appropriate to IS research. They listed a mix of methods which are conceptual study; mathematical modelling; laboratory experiment; field experiments; surveys; case studies; future research; phenomenological research/ hermeneutics; ethnography; longitudinal study and action research. Their quoted list demonstrated the confusion alluded to earlier about the use of terms. For example, they listed phenomenological research/hermeneutics as methods which sounds broad. It is difficult to envisage a paradigm within a method as it is usually seen the other way round. Galliers (1991; 1995) added theorem proof, simulation and reviews to possible methods of research in IS.

The researcher identifies with Cavaye's (1996) look at method as a way of using tools and techniques to collect evidence. Within the boundaries of the method, the researcher employs certain data collection instruments and utilises particular techniques for analysing the data. This is similar to what Introna and Whitley (1997) described as the first way of using the term method. The other way of looking at method according to Introna and Whitley, is as an all encompassing meta-term (e.g. engineering method).

Campbell (1975: p. 191) called upon researchers to achieve an applied epistemology integrating the quantitative and qualitative 'knowing'. Similar to the integration of paradigms advocated by Lee (1991), Leonard-Barton (1990) combined a real-time longitudinal study with nine retrospective case studies. On the other hand, Gable (1994) proposed a multi-method model of IS research by using the complementary case study and survey research methods. The multi-method view was also suggested by Attwell and Rule (1991) and endorsed by Bikson (1991).

The Applicability of Paradigms to Different Situations

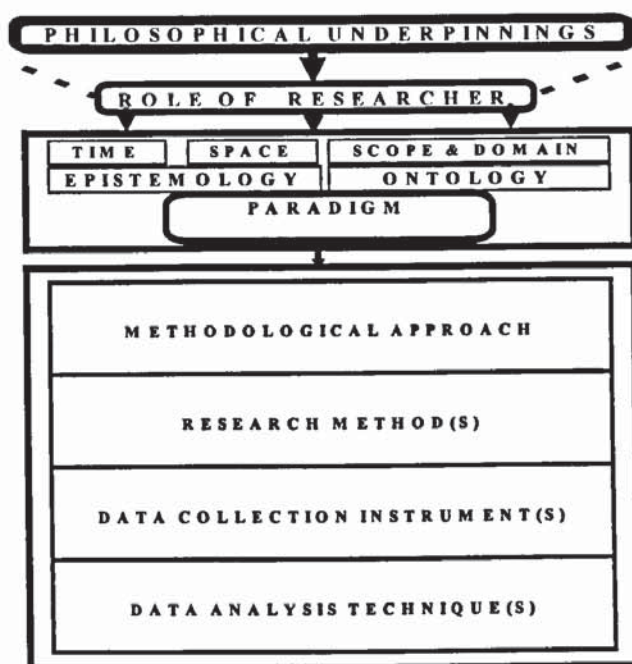
Researchers have generally assumed that paradigms are readily and generally applicable. This is not accurate. The researcher posits that, besides the ontological and epistemological considerations, other factors like time, space and scope and domain do influence the choice of paradigm for carrying out particular research. The methodological perspective, as will be presented in the following section, raises the question that it is not always possible to assume a generic paradigmatic applicability according to the researcher's wishes.

5.4 Methodological Perspective

Following Weick (1979) who emphasised the importance of sense making in our social life, the researcher considers the purpose of research as a way of making sense of the world we live in, rather than Kuhn's (1970) characterisation as puzzle solving, with the hope of arriving at theories that will clearly explain the complex web surrounding and governing our very existence. It is assumed that humans

will then be in a better position to solve existing problems, as well as predicting and contemplating actions for future plans. In this pursuit, previous theories are tested with the aim of building new ones that provide an incrementally improving understanding. People need to be able to understand and explain, which implies thorough insightfulness into phenomena, in order to acquire maximum gain and optimal accumulated benefit.

Figure 5.6: A General Methodological Perspective

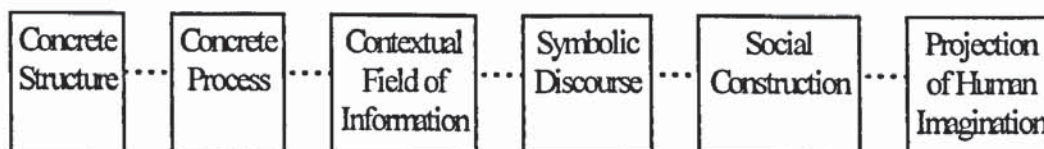


The researcher views that there is much conceptual confusion in the IS/IT field due, in part, to definitional problems. This was suggested by Bjørn-Andersen et al (1986) and also Keen (1991a), but still holds today although the field has aged by over a decade. With this understanding in mind, the researcher postulates that rather than sticking to the classical dichotomisation between, for example, qualitative and quantitative research, or pre-defining terms such as IS, one should submit an integrated *methodological perspective*, shown in figure 5.6, that covers the philosophical underpinnings, besides all other details related to research design, for each individual piece of work. This section might at first appear as a repeat or an addition to the presentation of the methodological terms of section 5.3 but it is not. It is intended to explicate the proposed methodological perspective and demonstrate its adoption and application to this research.

5.4.1 Philosophical Underpinnings

In order to distinguish research from journalistic writings, there is a need to show the original tenet behind the understanding of things. Guba and Lincoln (1988) stated that the underlying assumptions of the research have critical precedence. People do not agree on most concepts and constructs. A way of basing the work is to show how the researcher perceives certain conceptualisations related to ontology and epistemology. This is equally important, as much as following a particular path to arrive at information which may contribute to knowledge. In fact, it can be looked at as a pre-requisite to judging the credibility of obtained information based on a frame of reference. Therefore, an epistemological understanding is needed to lead us to some findings that are useful to the epistemology or nature of knowledge. The understanding of the ontology or nature of reality is of paramount importance for the purpose of locating the findings within that same frame of reference. This symbiotic relationship has a primary implication for the entire research design. Morgan and Smircich (1980) emphasised the cruciality of the ontological and epistemological difference and devised an ontological spectrum of assumptions for representing reality. Their classification, as shown in figure 5.7, extends from looking at reality as a concrete structure to considering it as a projection of human imagination. In adopting a social constructivist stance, this research lies towards the far right hand side of the spectrum.

Figure 5.7: The Ontological Spectrum of Morgan and Smircich



5.4.2 Role of Researcher

The researcher concurs with Yin (1993) in submitting that the research assumptions regarding multiple realities that are socially constructed, and the

investigator as the primary instrument for data collection, are what distinguish the ethnographic evaluation from other approaches.

This thesis posits that the researcher, as the inquirer, is the main instrument, who uses several sub-instruments to collect the primary data. Lincoln and Guba (1985)³ have long been staunch advocates of this contention. They submitted that regardless of imperfections, an interpretive research has requirements that can be met best by the researcher as the primary instrument. However, it is worth stressing that researchers have to take good care in accounting for those imperfections.

The philosophical underpinnings, besides the prior presuppositions and experiences, form the backbone of the researcher's thinking and frame of reference. Carrying out *tabula rasa* investigations is considered inconclusive and therefore realistically untenable. A parallel point with confluence was raised in chapter 1 as related to the possibility of neutralising all other factors or what is termed as a state of *ceteris paribus*. These thoughts have directly influenced the choice of paradigm selection and became an integrated part of it.

Interpretations are carried out by the researcher. It is this person who is influenced by the social interactions. The medium of interpretation is the discourse, whether language or written word. Husserl's (1931) bracketing, which entails distancing the researcher and his subjectivity, appears impractical as the knower (subject) and the known (object) are interrelated and in, one way or the other, inseparable because it forms part of the being-in-the-world truism (Heidegger, 1962). Boland (1985) contended that all subsequent phenomenologists do not share Husserl's emphasis on the need to demonstrate phenomenology that yields pure objectivity based on pure subjectivity. The researcher after Boland, adopts Gadamer's Phenomenology (1975a) which is considered a historic act of interpretation, grounded in tradition. Winograd and Flores (1986) agreed with Gadamer's 'opposing approach', to that of Husserl,

³ This is also clear in their later work Guba and Lincoln (1988; 1994) and Lincoln and Guba (1989).

which takes the act of interpretation as primary. It is an interaction between different *horizons*⁴ of the text and what the interpreter brings to it. In stressing the role of humans as social creatures Gadamer (1975a: p. 245) explained the essential historicity in understanding ourselves and stated that:

‘In fact history does not belong to us, but we belong to it. Long before we understand ourselves through the process of self-examination, we understand ourselves in a self-evident way in the family, society and state in which we live. The focus of subjectivity is a distorting Mirror. The self-awareness of the individual is only flickering in the closed circuits of historical life. That is why the prejudices of the individual, far more than his judgements constitute the historical reality of his being’.

Consequently, *it is inherently untenable to strip away all assumptions to guarantee objective knowledge*. The hermeneutic process of interpretation extends to cover our very own life and living. Boland (1985:p. 195) was drawing on Gadamer when stating that ‘the world must be interpreted by us in order for our intentional action to be possible’. Myers (1994a), likewise, supported the text-interpreter dialectic (Gadamer’s notion of hermeneutic circle), and expressed that pure hermeneutics advocated the need for the understanding of the text in terms of itself.

5.4.3 Research Paradigm

Guba and Lincoln (1994) considered that there were four underlying paradigms for research namely positivism, post-positivism, critical theory and constructivism. Chua (1986) discussed three types based on the underlying research epistemology as positivist, interpretive and critical. The researcher, after Easterby-Smith and his collaborators (1991), adopts the view that there are two paradigms namely positivist and phenomenological. However, because of the philosophical basis of the paradigm as will be explained next, the researcher opted to call it an interpretive/phenomenological paradigm. It is contended that

⁴ Gadamer’s term which broadly resembles Checkland’s *weltanschauung* or ‘worldview’ in his seven step Soft System Methodology (Checkland (1979a; 1979b; 1981; 1988); Checkland and Scholes, 1990; Checkland and Holwell, 1997). Checkland amplified the ‘Weltanschauung’ as ‘The (often-unquestioned) outlook or taken-for-granted framework which *makes this particular RD a meaningful one*’ (Checkland, 1979b: p. 42). (The Italics appeared in the original paper and RD is short for Root Definition).

in order to reach a decision on the suitability of a paradigm for carrying out particular research, one should consider a number of structuring dimensions. These include time, space, scope and domain, epistemological and ontological stances.

The *time* dimension acts as a constraining factor and a motivator for adopting a particular paradigm. This applies to the timing of doing research, the time available to do research, the time of the people to be researched and the remaining part of the progressive time series of actions and events. Similar to the time dimension, the *space* dimension has own limitations and motivations. Testing for methodological applicability was a main research objective. One has to remember where the research is carried out. For example this research was carried out in Jordan which is a developing third world country. Space also includes the selected market and industry which the research covered, as important research issues. The *scope and domain* of coverage with all ramifications have crucial influence on the choice. One example is the type of access obtained. Yin (1994) favours distinguishing various types of methodology according to types of research problems. Other researchers advocate a paradigm based on the choice of research topics (e.g. Hassard, 1991), but this seems inconclusive as it calls for making concomitant changes to the philosophical underpinnings. Therefore, it is considered more appropriate that paradigmatic considerations accommodate the dimensions of time, space, and scope and domain.

The researcher concurs with Burrell and Morgan (1979) in considering ontology and epistemology as two major parts that characterise a paradigm. The research presumes, as its *ontological stance*, that there are multiple realities which are socially constructed. The *epistemological stance* is that which considers knowledge as made up of values and facts. The knowledge must be observed or collected and communicated through a process of interpretation. This in itself is influenced by the social context and its interactions.

Interpretive/Phenomenological paradigm

This paradigm is not advocated as the only plausible and practical solution to carrying out research. It is but one way that has certain characteristics and claims to the special specifications of the kind of knowledge it can contribute. It is therefore important to ascertain the nonmutual exclusivity status in this context. Boland (1985: p. 194) states that 'phenomenology does not assert the existence of an absolute knowledge'.

A basic premise of this paradigm is that the understanding of the phenomenon has to be made within the boundaries of its context. The way people see the phenomenon is very crucial to interpreting it, so is the social web surrounding it. Through our interpretations we get to discover and learn the essence of the experience. Phenomenologically speaking, the knowledge we could possibly know is what we manage through transcending the basic activities to collectively grasp the essence of the experience. This engagement takes the researcher to realise that facts and values are inextricably interlinked (Archer, 1989; Walsham, 1995b).

It is implicitly assumed that this paradigm is more suited to qualitative research (Patton, 1990; Guba and Lincoln, 1981). However, there is no restriction or limitation of use except as related to time, space, and scope and domain.

The interpretive/phenomenological paradigm adopts the view that there should be no *a priori* positive research design which presumes causality and advocates a malleable design. The contention is that causality-presuming design is very restrictive in limiting the theorising capability and creativity of the researcher. Walsham (1993; 1995b) stressed emphatically that there should be no total adherence to the research framework, and also that the researcher should maintain a degree of scepticism concerning the value of such a framework. Researchers are not supposed to go blindfolded into the field. There should always be enough room to accommodate progressive findings that are revealed or unveiled during the execution of the research.

Table 5.5: A Comparison of Two Paradigms

(Source: Easterby-Smith et al, 1991)

	POSITIVIST	PHENOMENOLOGICAL
BASIC BELIEFS	-External and Objective World -Observer is Independent -Science is Value-Free	-Socially Constructed and Subjective World -Observer Part of Observed -Science driven by human interest
RESEARCHER	-Focuses on Facts -Looks for Causality and Fundamental Laws -Reduces Phenomenon to Simplest Elements -Formulates and Test Hypotheses	-Focuses on Meaning -Tries to understand what is happening -Looks at Totality of Situation -Develops Ideas by Induction from Data
PREFERRED METHODS	-Operationalising Concepts to Measure Them -Using Large Samples	-Using Multiple Methods for Establishing Different Views About the Phenomenon -In-depth Investigation of Small Samples Over Time

Easterby-Smith and his collaborators (1991: p. 27) compared the two opposite paradigms that they called 'positivist' and 'phenomenological' based on three categories, namely: basic beliefs, researcher and preferred methods. The details of their comparison are shown in table 5.5. The researcher concurs with their view of how those paradigms compare. However, one note may be added regarding the size of the sample, whether for number of cases or number of respondents, and is expressed as 'if the in-depth investigation can be executed equally well, affording time and efforts, then enlarging size adds to insight'.

5.4.4 Methodological Approach

Choosing *organisational ethnography* as the methodological approach was a natural consequence of adopting the interpretive/phenomenological paradigm. This falls short of what Sanday (1979) suggested when considering anthropology, which subsumes ethnography, as a paradigm in itself.

Ethnography emphasises the discovery and description of culture and social structure of social groups (O'Connell Davidson and Layder, 1994). The researcher concurs with Orlikowski (1988) who explained that one can carry out an organisational ethnography without adhering to its classical characteristics as were established in anthropology and sociology. This depends on the details of the phenomenon being studied. The contention is that culture is a medium for interaction which floats upon investigating the organisational phenomenon and completing emic (from the perspective of the participants or insiders) and etic (from the perspective of the observers or outsiders) analyses. Bate (1997: p. 1152) was quoting Geertz (1973) and Schneider (1987) when submitting that 'the core notion is one of culture-as-text, in which the primary tool of understanding is an interpretive *reading* of that text'.

Many researchers have used ethnography to study organisations (e.g. Van Maanen, 1979; Smircich, 1983; Barley, 1986; and Orlikowski, 1988). They were drawing on the work of anthropologists like Malinowski (1922) and Geertz (1973). Malinowski believed in the total immersion in the particular culture to be able to describe it. However, the degree of involvement in the natural settings is a debatable point amongst ethnographers. So is the possibility of the pursuit of emic and etic objectives simultaneously (Barley, 1996).

Toren (1996) argued that ethnography is directed to looking at daily processes between particular persons, and is self-consciously historical and comparative. Drawing on Toren's understanding of ethnography, the researcher submits that *if researchers are considered as organisational ethnographers, then the analytical descriptions they produce are organisational ethnographies or organographies*. These are a traditional and general in concerning themselves with multiple issues related to the investigated phenomenon. They might use several instruments for data collection which could include, but are not limited to, participant observation. The output of such ethnographic research would be heeding Pettigrew's (1985a)

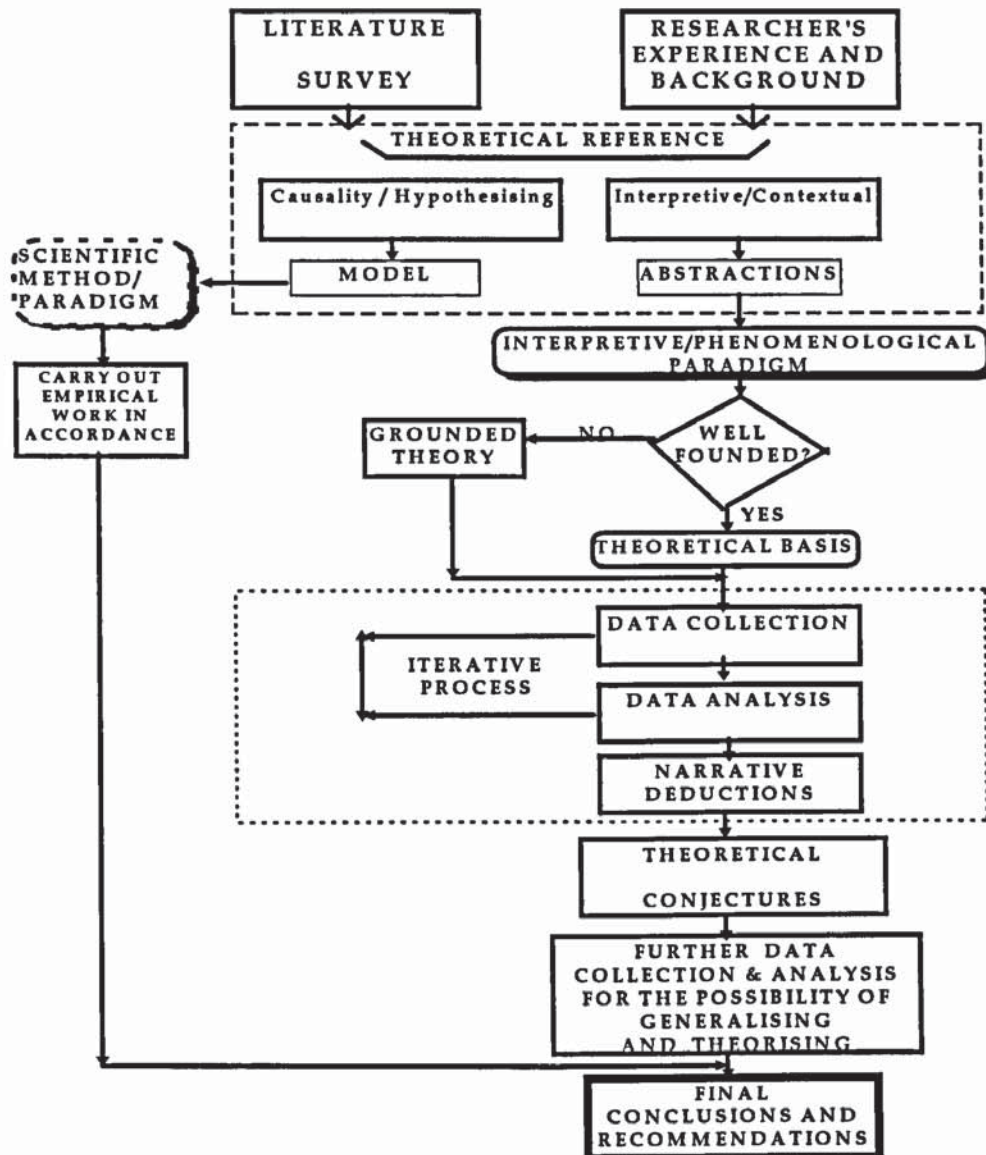
admonitions for the necessity of carrying out organisational research which is historical, contextual and processual.

In the sense that the phenomenon of investigation was related to the use of ISs in organisations, the adoption of ethnography was closer to similar applications as used by Barley (1986) and Orlikowski (1988). The researcher has benefited from Van Maanen's (1979) experience, especially as related to data analysis, but did not resort to adopting his ethnographic technique of complete immersion.

Details of research happenings, as were pursued at the early stages, tended to be guided by the recommended requirements of the grounded theory approach (Glaser and Strauss, 1967). It is important to point out, in this context, that the thesis refers to grounded theory as regarding the necessity of immersion in data and the interplay between analysis and data collection, in order to be able to arrive at theoretical conjectures. It does not implicitly advocate following the original grounded theory directives as originally proposed by Glaser and Strauss. Grounded theory was deemed useful in allowing an holistic coverage of contextual and processual elements which was mandatory for fathoming the phenomenon under investigation.

There is a mutually synergistic relationship between ethnography and grounded theory. For example, Yin (1993) suggested that ethnographic research does not necessarily require solid theoretical formulations. For ethnography, grounded theory seems the natural preferred approach for research execution at the opening stages of the research. However, the intention was not to use grounded theory for the full course because the theoretical wealth in the IS/IT field was considered well founded. Figure 5.8, which draws on the work of Remenyi and Williams (1995; 1996), illustrates the methodological thinking of the researcher. It includes the theoretical basis and elements of methodological perspective.

Figure 5.8: The Researcher's Methodological Thinking



5.4.5 Research Methods

The research used two different methods for Parts I and II. These were the *case study* and the *survey*.

5.4.5.1 Case Study

The case study is a commonly used method in IS/IT research. Smith (1990) and Cavaye (1996) are but two examples of researchers who recommended its usefulness as a highly versatile research method for carrying out research in information management. Campbell (1975: p. 179) considered the case study (or what Campbell called common-sense naturalistic observation) as 'the only route

to knowledge-noisy, fallible, and biased though it be'. The case study research method was espoused by many researchers in the IS/IT field such as⁵ Orlikowski, (1988), Horton (1990), Symons (1990a), Waema (1990) and in other fields of management such as Ball (1996) and Barbosa (1996). There are many other examples of published work that used single and multiple cases (e.g Benbasat et al, 1987; Runge and Earl, 1988; Venketraman and Zaheer, 1990).

According to Yin's (1994: p. 39) classification, which is shown in table 5.6, the case study design of this research was of type 3 since it has depended on the use of a single unit of analysis (holistic) and covered four cases.

Table 5.6: Yin's Classification for Case Study Designs

	SINGLE CASE	MULTIPLE CASE
HOLISTIC (Single Unit of Analysis)	TYPE 1	TYPE 3
EMBEDDED (Multiple Unit of Analysis)	TYPE 2	TYPE 4

Heeding Yin's (1993; 1994) reasoning for factors that affect the selection of the 'research strategy', the case study was considered fitting for the questions of the research and the degree of focus on contemporary events. As mentioned in chapter 1, Yin (1984; 1989; 1993) described the case study as a contemporary event within its own context, where the boundaries between occurrence and context are not very distinct, and which uses multiple sources of evidence. Having full access has facilitated an extent of control for the researcher over *behavioural* events. This was important for the researcher to become 'intimately familiar' with the cases (Mangham, 1986: p. 8). The research sought answers for

⁵ Those particular examples of PhD theses were deliberately given to remark that almost all those mentioned researchers have used the case study as the chosen method for their PhD research and most of them went on to specialise in its use. This big list for the IS/IT field includes researchers like Zuboff and Markus. This serves to indicate that the case study method is becoming particularly popular in the IS/IT field.

what, how and *why* questions which was an additional reason for favouring the use of case studies. It allowed in-depth analysis of events and their contexts and focused on processes and not just outcomes. After all, the purpose was to produce complete portraits related to the phenomenon of the role and use of ISs in organisations.

It is important to point out that the case study research method was used for part I of the research and in accordance with researcher's methodological perspective. As a method, it is not beyond criticism. The case study is mostly criticised for subjectivity, which highlights a bias by the researcher, and non-generalisability of findings. However, generalisability was not a main aim, and the methodological perspective asserts the pivotal role of the researcher with his subjectivity. This should confound such positivist criticisms which are valid, but not relevant if one considers the overall researcher's methodology as discussed throughout part III of the thesis. Znaniecki (1934) argued that the case study method might produce universal laws as compared to the probabilistic findings which characterise statistically dependent methods. On the other hand, Stake (1995: p. 100) suggested that 'how case study researchers should contribute to reader experience depends on their notion of knowledge and reality'. Qualitative research, as Stake explained, uses narratives to give the reader a better opportunity for gaining experiential understandings of the case studies. Thick description, experiential understanding and multiple realities have a heightened importance in this research which uses organisational ethnography as the adopted approach. Carrying out multiple case studies was the preferred way of producing in-depth organographies about those selected organisations based on the detailed and extensive coverage.

5.4.5.2 Survey

Part II comprised a survey. The aim was to produce one organisational ethnography of the Jordanian BFCS (a sectography) based solely on the use of questionnaires for gathering primary data. This was not based on a rigour-demanding statistical significance for producing what O'Connell-Davidson and

Layder (1994: p. 86) called a numerical 'snapshot' of the social world. Yet still, with a stereotypical tone, a questionnaire is traditionally a positivist instrument designed to compare cases systematically. It has the advantage of producing the most manageable form of data set where vast quantities of data can be collected, processed and analysed (O'Connell-Davidson and Layder, 1994). It is criticised, as May (1997) has stated, for attempting to show causality relations between variables and because it rules out the possibility of understanding the process of value and behaviour adoption. Those criticisms are legitimate if questionnaires were used as the main positivist instruments. But not if used, as in this research, as part of a multi-method approach following a multiple case study fieldwork, thus, as May (1997: p. 104) submits 'permitting the development of an understanding of agents' perspectives, social process and context. In addition, the researcher intended to test out the methodological applicability as one of the research questions. This question is referred to as 'paradigmatic' because of the use of a positivist instrument for carrying out a non-positivist research endeavour.

The survey involved the distribution of three different questionnaires to senior managers, MIS/computer managers and managerial users in 16 JFOs. This was necessary in order to have a representative picture about those organisations by referring to multiple levels and perspectives for data collection (Leonard-Barton, 1990; Orlikowski, 1993).

5.4.6 Data Collection Instruments

These need to be described as a major part of the proposed methodological perspective. As explained in the previous sub-sections and in accordance with the research premises, it is important to ascertain that the researcher is acknowledged as the *primary instrument*, who in turn, has chosen to use other instruments or tools for data collection. Yin (1993: p.70) asserted this in stating 'by comparison, data collection for ethnographic evaluation is heavily influenced by the method's assumptions regarding multiple realities and the investigator -

and not some mechanical tool or instrument - as the primary instrument for data collection'.

The researcher managed all data collection from multiple internal and external sources. For the primary data he made use of interviews, document analysis, non-participant observations and questionnaires. Further details about data collection by the different instruments (or sub-instruments) are provided in chapter 6.

5.4.7 Data Analysis Techniques

Coffey and Atkinson (1996) gave an expressive statement about their metaphoric understanding of research as a series of dialogues: with the data, ideas, informants, colleagues and oneself. The researcher endorses this view which was central to his thinking throughout the research stages. In fact, this mode of thinking is seen as endemic to the interpretive/phenomenological paradigm.

Interpretation should, as suggested by Gadamer (1975a; 1975b) and Heidegger (1962), go beyond the domain of the textual analysis and be placed at the very foundation of human cognition (Winograd and Flores, 1986). Therefore, the contemplated interpretive/hermeneutic analysis is an interacting encounter which should help us make a better understanding of the phenomenon under investigation. Besides the central role played by the researcher in collecting data, Benbasat et al (1987) pointed to the importance of his integrative powers in *analysing* case studies. Myers (1994a: p. 57) discussed 'dialectical hermeneutics'⁶ as an integrative approach in which 'the researcher does not merely accept the self-understanding of participants, but seeks to evaluate critically the totality of understanding in a given situation'. The intended hermeneutic analysis was dialectical in emphasising the subjective meanings of the individuals as well as their conditioning social structures.

⁶ The researcher identifies with Myers's understanding of hermeneutic analysis as dialectical rather than pure. Therefore, it is worth pointing out that interpretive/hermeneutic should be taken as synonymous to dialectical hermeneutics. The used term was considered more suitable to clearly indicate the linkage between the type of applied analysis and the adopted paradigm.

As discussed earlier, the analysis of data was by means of interpretive/hermeneutic techniques. All interviews were transcribed ('almost' verbatim) in Arabic, summarised and translated into English. Translating the full versions of interviews was considered unnecessary, besides being unmanageable for the sheer amount of work required. The aggregate analysis was an interpretive reading of texts, events and actions. The interpretation was triple hermeneutic⁷ because the second-order construction by the researcher, as called by Van Maanen (1979), had involved an intermediary stage of translation between Arabic and English. Nevertheless, the analysis enacted all stages of interpretations and recalled all possible incidences of organisational encounters.

The analysis entailed reviewing data against nodes as they appeared in the analytical framework (figure 5.3) for which an explanation was given earlier in this chapter. However, interpreting data meant that other emerging categories or themes had to be brought into centre focus during the the intricate analysis. Continuous reduction of data was pursued to arrive at various conclusions as presented in the thesis.

The researcher makes no claim that the analysis was a full 'discourse analysis' as proposed by Potter and Wetherell (1987), who highlighted important considerations for completing a discourse analysis. These included linking analysis to research questions, small size of selected sample, coverage of analysis to data collected not only by interviews, interviews and transcription of relevance, thorough analysis, validation and producing final report. Potter (1996: p. 130) argued that discourse analysis is not just a method but 'a whole perspective on social life and research into it'. In fact, he went further to list discourse analysis amongst other 'constructionist approaches' to carrying out research. Nevertheless, in essence, the analysis of this research has benefited from this technique without strict adherence to its requirements. Similar to what a discourse analyst would do, as suggested by Potter and Wetherell (1987), the

⁷ Giddens (1984) used the term 'double hermeneutic' when comparing the two frames of the lay actor with his socially constituted world and the social scientist with his invented metalanguages. Giddens pointed to the constant *slippage* between the two in the practice of social sciences.

researcher was constantly interrogating his own assumptions and the way one makes sense of things. However, the analysis of a transcribed interview was not carried out in isolation based only on what has been written, transcribed and translated. The interview was an event amongst many taking place in organisations. It has added to the clarity of issues related to the interviewee as a person, and in his corporate capacity, to the organisational picture. To draw an organography, one would need to fill up gaps of missing details on almost a pixel by pixel basis. This may also explain the usefulness of using multiple sources for primary data collection as well as the importance of taking field notes.

Another point that the researcher shared with discourse analysts, as prescribed by Gill (1996), is that when talking about events and phenomena, the role of people is not merely to give a neutral description but also to construct a version that serves the specific discursive purposes.

The discourse analysts' notion of interpretive repertoires was used in the thesis to point to the comprehensiveness and legitimacy of depending on individuals as true representatives of their organisations. Concurring with Potter's (1996) recommendations, interviewees were thought to have been drawing on a number of interpretive repertoires according to their construction of the sense of questions asked about the role and value of ISs. The term 'interpretive repertoire' was seen to parallel Orlikowski's and Gash's (1994) 'technological frameworks' which they used to make sense of issues related to use of IT in organisations. On the other hand, Bijker (1987) used 'technological frame' to mean a shared perspective by a relevant social group for understanding the multi-dimensionality of an artefact.

The general characteristics and scope of application of the interpretive/hermeneutic analysis to the research are discussed in the following paragraphs.

Interpretive/Hermeneutic Analysis

A brief outline about the adopted guideline for analysing the empirical data is given here. The coverage includes the general theoretical characteristics of interpretive/hermeneutic analysis, as well as the scope and limits of application to the research as used in actual fact.

The general characteristics have to be in full compliance with the adopted interpretive/phenomenological paradigm. The following points explain the criteria adopted for carrying out the analysis of the research:

- 1- Generalisation is not intended beyond the researched organisations in the selected sector.
- 2- The analysis is based on interpretations of findings and does not seek to highlight statistical significance *per se*.
- 3- Data collection depended foremostly on the researcher and his instruments.
- 4- The validity and reliability involved soliciting educated opinion from bankers, technical experts and academicians, about the researcher's sub-instruments. In addition, some corrections were made to the senior managers' and MIS managers questionnaires at the early stages of survey distribution and the necessary follow up was pursued with same group respondents to effect those changes accordingly. Furthermore, the Arabic versions of questionnaires were also checked by a linguist.
- 5- Although an interpretation does not primarily depend on triangulation, there was an intersection between questionnaires in part II. The reason was inclined towards comparing views of top management, MIS management and managerial users. The triangulation in part was a natural consequence to using multiple resources for data collection. It must be stressed here that triangulation was not a main aim by itself. However, it was looked at as one of the means to make sure that the data was based on a true reflection of the opinion and provided details. Some of those issues could not be ascertained and had to be accepted as they came along.
- 6- There was a guiding framework for data collection. This was also used in data analysis. As for part II. in certain questions the written answers gave enough

space for interpretation. The answers were not generalisable to all cases but were indicative of certain points to single out during analysis.

A View on Using Computer Packages for the Analysis

A decision was made earlier on not to use a computer package (e.g. NUD*IST) for analysing interview data. This stemmed from two convictions namely:

- 1- The researcher was supposed to decide on major headings on an *a priori* basis for the purpose of the analysis and therefore, the computer program would have only helped as an extended editor or a sorting machine. Therefore, qualitative packages were considered unsuited for analysing the research primary data.
- 2- The analysis depended mostly on the original Arabic versions, and as far as the researcher was aware, an Arabic version of a qualitative data package was not available.

A computer package (SPSS) was used to assist the researcher in analysing the questionnaires of the survey in part II. The use was related to producing various lists of responses and comparing the answers of the triangulatory questions (A list matching those questions is included in appendix III). This was necessitated by the fact that those questionnaires had a large number of questions. In addition, the response rate was high and the analysis involved catering for a total of 181 questionnaires, of all three types. In addition, Microsoft EXCEL was used to produce the different charts for the four cases, based on the secondary data obtained.

Reporting the Analyses of Part I and II

Following the methodological perspective as outlined throughout section 5.4, the researcher opted to present analyses, as alluded to in chapter 1, in the form of four organographies of part I (chapter 7) and a sectography for part II (chapter 8). These terms are defined as follows:

An Organography: A special form of ethnography for reporting intensive studies that are carried out in organisations. This is synonymous to 'organisational

ethnography' as used by some researchers in the IS/IT field (e.g. Orlikowski, 1988; Walsham, 1993). It is used to distinguish between reports about organisations and the more traditional ethnographic reports resulting from classic anthropological studies.

A Sectography: A special form of ethnography for reporting intensive studies that are carried out in a sector. This can be a result of executing multiple case studies in the sector under investigation, or doing a survey that involves a large proportion of companies in that sector.

Producing Organographies and Sectographies can benefit from multiple sources for data collection but does not solely and heavily depend on participant observation.

5.5 Summary

This chapter has discussed the theoretical foundation and methodological perspective of the research. The discussion included a theoretical basis asserting the need for considering the impacts of ISs as well as the influencing determinants. In addition, an organisational and an analytical framework were presented as the basis for data collection and analysis. Besides presenting methodological foundations, the proposed methodological perspective emphasised the role of the researcher and explained the adoption of an interpretive/phenomenological paradigm as well as the choice of organisational ethnography as the methodological approach. The case study and survey were the two research methods used with the interview and the questionnaire as the chosen instruments for data collection. In addition, definitions for Organography and Sectography were also given.

Based on those theoretical suppositions, the following chapter 6 discusses the data collection design. This will cover the general research specifications, stages of research and details of primary and secondary data collection.

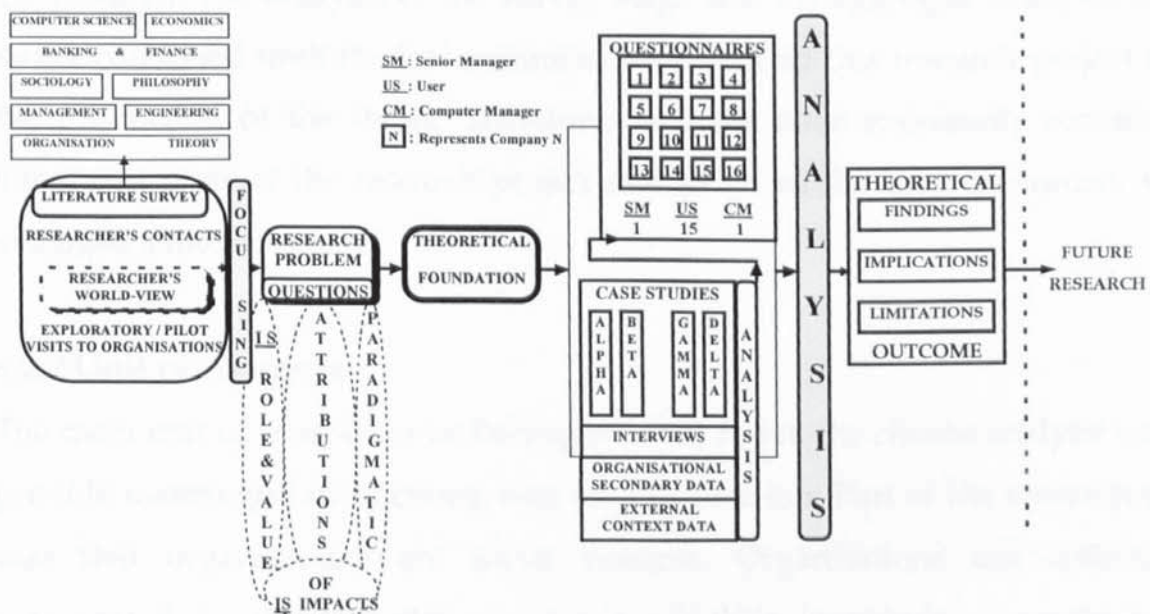
Chapter Six

DATA COLLECTION DESIGN

6.1 Introduction

The previous five chapters have served to give an introduction and background, literature review and the theoretical and methodological foundations. This chapter proceeds to give more empirical details about the research. The general research specifications comprising time span, unit of analysis, population and sample are established in section 6.2. Section 6.3 explicates the complementary stages of the research and explains how the primary data was collected. In addition to eliciting the sources of data and scope of coverage, section 6.4 presents a discussion of secondary data collection. This is followed by shedding light on issues related to access to organisations in section 6.5. The following figure 6.1 is an expanded version of figure 1.3. It is presented here to provide an overall view of the research methodological flow and includes the details that are explained in this chapter.

Figure 6.1: The Methodological Flow of the Research



6.2 General Research Specifications

In order to shed more light on research details, this section presents four general specifications of the research which are time span of research, unit of analysis, population and sample.

6.2.1 Time Span of Research

The research took place over a period of three years, between October 1995 and October 1998. The 'zeroth' (preliminary) stage of fieldwork had involved the exploration and probing into places and circumstances of the prospective research. This initial stage lasted about eight weeks and was completed by September 1996. It was followed, 23 weeks later, by the main part of the fieldwork (Part I) which took twelve weeks. This second stage involved carrying out extensive interviewing in four organisations. The work was finished during May 1997. The last stage of surveying the population of the Jordanian banks and financial companies sector (Part II) of the fieldwork spanned over five weeks and was completed by March 1998.

Following the preliminary stage, all collected data were analysed to make decisions related to research problem formation and getting access to organisations. Part I involved continuous analysis as details were being unfolded. The results of the multiple case studies stage were needed for executing Part II of the research. The analysis of the survey stage and the aggregate analyses of all stages continued until the last minute of rounding up this research project with the production of the thesis. Therefore, analyses have necessarily constituted integrated parts of the research project and as far as the time consumed, were managed simultaneously.

6.2.2 Unit of Analysis

The main unit of analysis or as Danziger (1985) put it, the chosen analytic unit to provide meaningful distinctions, was the organisation. Part of the research tenet was that organisations are social systems. Organisations are collectively represented by their employees who enact their knowledge repositories or

interpretive repertoires (Potter and Wetherell, 1987). They are made up of different elements and most importantly, the human individual. Therefore, it is no false aggregation to use individual respondents for the purpose of drawing inferences about their respective organisations. The data for part I of the research project, hence, involved interviewing six kinds of involved organisational stakeholders. However, the data for part II was gathered from three groups of respondents. Analysis of the first part had shown that covering more than the three types of respondents would not have added incremental clarity to the resolution of the real picture. A similar conclusion was arrived at by Neumann and Segev (1980). They recommended the importance of paying special attention to the position of users in the organisation when carrying out a user-based evaluation or assessment. Neumann and Segev gave preference to users with managerial positions rather than operational workers.

6.2.3 Population

In its capacity to monitor and control the financial situation of the country, the Central Bank of Jordan has its own classification of Jordanian financial institutes. At the initial stage of considering potential organisations, it was decided to adopt the classification of the CBJ for defining the Banks and Financial Companies Sector and consequently, the Amman Financial Market (AFM) classification was considered a sub-set of the classification adopted by the CBJ. Some organisations listed in the CBJ classification were excluded from the population for methodological and practical considerations. These were the non-Jordanian banks, Government owned corporations, jointly owned organisations, representative offices of foreign banks and money exchangers. This left only those companies that were members of the BFCS.

In general, Amman Financial Market lists companies under four different sectors namely Banks and Financial Companies, Service Companies, Insurance Companies and Industrial Companies. The population of Jordanian public-shareholding banks and financial companies comprised 16 banks and one financial company as were listed on the AFM on 1st. March 1997. Only 16 of

those were listed on the primary market. The relatively new, at that time, Jordanian Export Bank (formed in 1996) was listed on the secondary market. It was still in the early stages of setting up an IS department. Therefore it was excluded from the study. The population of the study was considered as comprising fifteen banks and one financial company (16 in total). A detailed list of those organisations was shown in table 2.2.

In addition, according to the CBJ classification of companies belonging to this sector, there were five types namely commercial, specialised, investment, Islamic and financial companies. The BFCS contained a total of twelve large¹ and four medium sized organisations.

6.2.4 Sample

Hammersley (1990) has distinguished between focus of research and studied cases. By focus, he was referring to the area in which a study makes claims, while case studies would imply where the researched phenomena are specifically located in space and time. The selected organisations for part I have therefore constituted a 'purposive informant sample', or what Patton (1990) called a combination or mixed purposeful sampling with a different connotation and aim to that of a pure positivist research design. It has a combined criterion of opportunistic and convenience sampling. According to Patton, the studied cases should render cogent information about the topic of investigation. Stake (1995) recommended a selection of cases that may give a maximum learning experience during the short available time for executing the research. Purposive sampling in qualitative research was also supported by Miles and Huberman (1994) because of the smaller size of samples. The generalisation of findings from a multiple case study design would, as Yin (1994) has pointed out, apply to theory rather than populations.

¹ According to the Amman Financial Market classification of companies based on the number of employees, and adopted by other Jordanian researchers (e.g. Al-Rasheed, 1994); small: 1-50, medium: 51-200 and large: over 201 employees.

Yin (1993) presented the Giddensian view which considered case methodology microscopic due to insufficiency of coverage. He even considered that the relative size of sample did not transform a multiple case into macroscopic study. Yin (1994) distinguished between statistical and analytical generalisations and emphasised comparability through a theoretical framework and replication if two or more cases were found comparable. Contrary to Yin's view, Glaser and Strauss (1967) did not consider doing multiple cases necessary as it would not contribute to generating theory, neither would the kind of evidence. Yin's contention was that the general applicability depended on methodological quality and rigour of construction of case(s). The drive for part I of the research was to understand the phenomenon under investigation through an in-depth look at four cases.

Nevertheless, the researcher held the view that absolute generalisation was (and is) not attainable but believed that by studying a few cases from same sector one could have sufficient details to enrich picture building, leading to clearer understanding of the phenomenon or, as Eisenhardt (1989) has suggested, for replicating and extending emergent theory. After all, the research considered organisations that might be expected to hold a degree of compatibility regarding working practices and environments because the sector is regulated by the CBJ. Therefore, as Orlikowski (1993) has said about her two cases, it was the theoretical relevance and purpose, as seen in the cases, that was considered vital for Glaser's and Strauss's (1967) theoretical sampling.

The final selection of cases was based on the following two factors:

- 1- The extent of interest shown and degree of access promised. Initially, seven considered giving access but later only four were prepared to give full open access. Although the original objective was to secure access to three organisations, it turned out that the multiple case study fieldwork of part I comprised four cases. Three cases were considered as being the minimum sufficient number to show patterns amongst organisations belonging to the same sector. To guarantee access to three organisations, contacts were made with all

seven who expressed willingness to participate in part I. The researcher was overwhelmed when four organisations expressed their interest and was unwilling to disappoint any one organisation. Besides, from a cultural view point, it would have been disrespectful to that organisation and the third party mediator who had assisted in facilitating such access.

2- The size of the company. Four large companies were chosen to preserve a degree of comparability between cases. Albeit generalisation was not a main objective, the comparability and replication of cases were two tacit considerations. Even for positivist research based on hypothesis testing, Benbasat et al (1987) argued that for a reasonable confirmation of a hypothesis, it requires some analytic deductive testing of a representative and substantial sample.

Part II involved surveying all members of the sector of JFOs, which included fifteen banks and one financial company.

6.3 Stages of Research and Primary Data Collection

The research project started with an interest in studying the effect of ISs on the work of Jordanian Financial Organisations. The research problem was not clearly defined. After a review of the relevant literature and in conformation with the adopted methodological perspective embedding an interpretive/phenomenological design, it was decided that the first empirical stage should be exploratory. This was followed by the multiple case study fieldwork in part I and a survey in part II. The three stages of the empirical work are explained as follows.

6.3.1 Exploratory and Piloting Work

This zeroth part was exploratory and encapsulated preliminary piloting work for possible questions related to the phenomenon under investigation. The research problem had not been fully formulated and the research design did not exist. The researcher was aware of the general research area without finalisation of any details. This stage was useful in getting the feel of the real situation in real time.

All appointments involved open inforamatory interviews. Useful details were noted in writing. Some of the appointments were with general managers or assistant general managers and the others were with technical people and general users of ISs in those organisations. It turned out that those interviewees were instrumental to securing later access to their respective organisations. In addition to the public shareholding organisations, a number of public departments were visited for the purpose of secondary data collection. More details about this are included in section 6.4.

The result of this stage was that more insight was gained to focus the research. The researcher became aware of how to tackle the research problem and formed an educated opinion on who could possibly be interviewed in the chosen organisations. By the end of this stage, the researcher concluded that it was feasible to research the BFCS. Furthermore, there was an increase in the level of confidence about securing access to organisations. This was especially needed for the in-depth case studies of part I, which were to follow. In the mean time, established contacts with helpful persons in some of those organisations were sustained over the coming months. In addition to appreciation of personal acquaintance, the latter measure was additionally driven by the researcher's fear of the withdrawal of access upon discovering and disapproving of the demanded extensive involvement of the researcher in those organisations.

6.3.2 Multiple Case Study Fieldwork (Part I)

Part I was the main and the longest stage of the research. It involved carrying out extensive fieldwork in four organisations. As required by the ethnographic approach to draw an Organography, a number of data collection instruments were used. This is beneficial in theory building because it gives multiple perspectives and provides more information on emerging concepts, in addition to being useful in the substantiation of constructs (Glaser and Strauss, 1967; Eisenhardt, 1989; Pettigrew, 1990; Orlikowski, 1993).

The main instrument of the researcher was the interview. According to Bryman's (1989) classification, this was an interview-based study (type 3) that employed unstructured or semi-structured interviews and documents as sources of data, with supplementary non-participant observations (aided by taking field notes). But the coverage entailed collecting data in four organisations which makes it also of Bryman's type 4 (multi-site study). Type 1 was the total participant studies where the researcher would be a member of the organisation, while type 2 differed in being semi-participant studies with the researcher being an outsider.

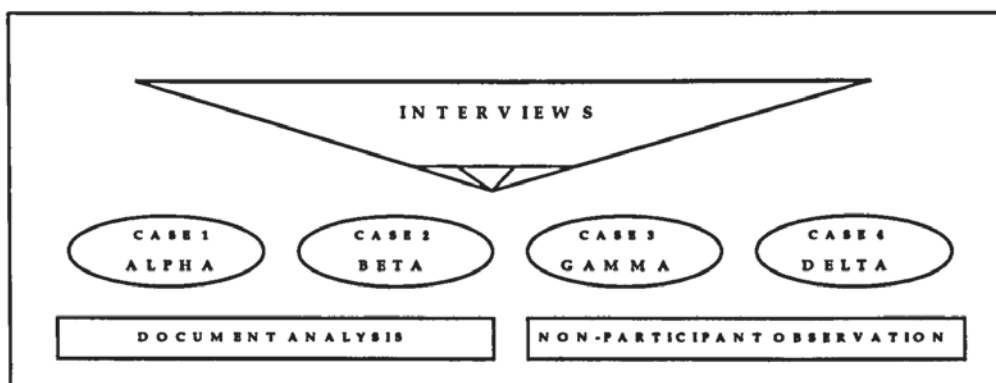
The interviews tended to be open at the very early stages of embarking on this part. They became semi-structured soon after. At that stage, questions were becoming more focused and specific. However, enough room was left for the respondents to provide self-elaborated answers. This was considered a methodological necessity for the purpose of interpretation. The duration of the interviews varied between a minimum of 30 minutes and a maximum of 150 minutes. The shorter interviews were with customers, low level users and busy general managers. The longer ones were with assistant general managers, MIS/computer managers, middle managers and natural groups. The latter kinds were considered the major informants (Bryman, 1989). Tape recording could not be used indiscriminately and only when the respondent granted permission. Besides wanting to maintain a high ethical standard, this was an extremely delicate issue and the great majority unreservedly refused. Therefore, the researcher had to depend on taking hand written notes during interviews and writing further comments as soon as was possible after finishing each interview.

Some interviewees carried on talking after they were thanked for participating. In fact, some gave very valuable information at that stage after they felt they were relieved of 'formal' pressure. The details obtained were relevant for proceeding with the research, in what was considered the most appropriate and relevant manner. One should add that, for the majority of cases, the social foreplay prior to interviewing was crucial in getting more insightful details. This is an understandable pre-requisite in the Jordanian national culture, or perhaps in

many cultures to a varying degree. The extent of involvement and duration differs between the different cultures.

In addition, this stage involved the unavoidable non-participant observation due to the long time expended at those organisations. Field notes were recorded about general organisational encounters with the use of the information system, besides other subtleties that were considered relevant to learning about the corporate culture. For example, an assistant general manager's regular contacts with low ranking subordinates, demonstrating an interactive management style and leadership, and the implication this might have. This was not the norm or standard practice in all four cases. Furthermore, the researcher had many chances of socialising with respondents over a glass of tea or a cup of Arabic coffee. This was a normal practice in Jordanian organisations. In a few instances, it was a case of joining in over a working lunch on site and a limited number of interviews were made at the home of those respective interviewees.

Figure 6.2 Multiple Instruments for Data Collection



Hammersley and Atkinson (1995) pointed out that in literate societies, written accounts are important features of settings, which should not be neglected or overlooked by researchers. Therefore, a limited application of document analysis was used. In some cases, the researcher was allowed to inspect minutes of meetings of the board chairman with the general manager and the assistant general managers. The working procedures were made available in some cases and also reports on training courses and plans. Other documents inspected were

corporate studies and recommendations for Business Process Reengineering, internal questionnaires for evaluating IS and some correspondence with the Central Bank of Jordan. Figure 6.2 gives a diagrammatic summary of the data collection instruments.

6.3.2.1 Data Collection Technique

The premise related to generalisation, as highlighted in sub-section 6.2.4, governed the applied technique for the collection of data. The researcher went in with a provisional interview schedule based on an analytical framework to guide the initial stages of the research. The preliminary or zeroth stage of the fieldwork was useful in scrutinising and synthesising initial ideas based on previous experience and a preliminary literature survey, with early feedback. The envisaged plan ran as follows:

- 1- Interview all respondents in the first organisation based on the tentative interview protocol.
- 2- Make appropriate modifications (based on preliminary analysis of the early interviews) to protocol before starting the interviews in the second organisation.
- 3- Compare and contrast the first two organisations from data gathered so far and make further alterations to the interview protocol as applicable.
- 4- Repeat the same procedure for the third and fourth organisation accordingly.

The earlier encounters of the first case study helped make appropriate changes to the interview schedule. The procedure was repeated in the second case following a preliminary analysis of the first case. Collected data was continuously reviewed to evaluate the situation. The ideas were almost totally refined before embarking on the other two cases.

The last two cases were more straightforward in terms of procedural flow. The interviews became more structured and the research problem was demarcated. It was a case of seizing the opportunity to learn and gain more insight about the phenomenon under study. The final organisational interview schedule was the culmination of many reincarnations that progressively involved many revisions.

The researcher contends that the applied technique was suited to meet the objectives of drawing rich pictures (organographies) about those four organisations. Therefore, the emphasis was on filling gaps and not meeting the broad criteria of replicating the work for attaining compatibility. The compatibility came as a result of the application of the research frameworks to the collection and analysis of the data of parts I and II. It follows that the applied technique for data collection has affected the findings as was intended. Chapter 7 presents the four organographies under similar headings and it can be seen that, although details differ respectively, this was not a result of missing data that were not obtained as a direct result of adhering to the roles stipulated in the applied technique. The variation may be partly explained by the need to elicit certain issues that are peculiar to particular cases. In addition, there are also those unavoidable constraints on the research and limitations of the researcher.

6.3.2.2 Interview Schedules

It is important to reiterate that there was no rigid and strict adherence to a pre-defined framework or interview protocol. The analytical framework formed the fallback position or frame of reference. Presenting interview schedules is merely intended to give the reader an impression of what kind of questions were asked and how they were related to the research questions. Details were therefore crammed into one main *organisational interview schedule*, with specific reference of use to particular types of interviewees as applicable. The choice and type of respondents are explained next. The *customer interview schedule* was produced separately because of the dissimilarity in the type of questions asked. The Arabic and English versions of the interview schedules are included in Appendix II.

6.3.2.3 The choice of Respondents

Bearing in mind the deliberate aim of having multiple perspectives of different levels by slicing vertically through the organisation (Leonard-Barton, 1990; Pettigrew, 1985b), there were six different kinds of respondents including what is termed here the *natural group*. This latter kind covered interviews with people

who happened to be there and could not be isolated in order to carry out an interview that had been scheduled with a particular respondent. The people present were a mix of the different types of respondents. The natural group was considered as being different to the focus group, which is usually pre-arranged in terms of participating persons. Group or focus interviews are also different in their use to study some established group (Watts and Ebbut, 1987), while the natural type was non-contrived and took place serendipitously. A random sample of 3 *customers* for each of the four organisations was also interviewed. The number has no statistical significance. Originally, the researcher wanted to interview a larger number, but following the first interviews, it was discovered that a state of analytical saturation was reached (Glaser and Strauss, 1967). This indicated that interviewing more customers would not have made sizeable contribution to the information content. In addition, the choice of customers was made by the researcher in order to avoid direct bias of selection and outcome. In a few cases, customers were approached in branches for appointments. However, in the majority of cases, customers were already known to the researcher or introduced through shared friends. It is important to note that the intention was to find out how much the customers knew and valued the existing IS in their respective banks.

The other *four kinds* of respondents are described as follows:

1- Senior manager: This category included positions that were considered suitable to convey details related to planning of corporate strategies, as well as monitoring and controlling the execution of short term aims. Basically, it contained a member of the board of directors, a general manager or an assistant general manager.

2- Middle manager: An employee at the level directly below that of senior management. The name of such positions varied amongst organisations. For example, an aide to the assistant GM, a first manager, a branch manager or a primary department manager. Since reporting in organisations was not strictly according to organisational hierarchy, it was not possible to use the reporting system for the classification of managerial levels.

3- Operational manager: Any employee that held a position with managerial capacity and was below a middle management level. In some cases, this was a head of section in a branch or a junior manager with a span of control comprising only a few subordinates.

4- User: Any employee without managerial capacity and whose work required having access to the IS.

The selection of particular respondents in organisations had to be discussed with the liaison officer. Lists of names and their positions were prepared for all cases. There were minor deviations from the list originally drawn up. Changes came as a result of needing alternatives due to the unavailability of certain persons, and the additional request to interview particular people as their importance was highlighted by other interviewees or discovered by the researcher. The time schedules for interviews were also arranged with the liaison officer, but in most cases finalised with the concerned persons. Arrangements became easier as the fieldwork advanced.

6.3.3 Survey (Part II)

This stage involved an attempt to produce a general inter-organisation ethnography of the entire population of the Jordanian banks and financial companies sector (a sectography of the Jordanian BFCS). All sixteen organisations were approached requesting their participation.

The primary instrument of data collection was the questionnaire. The three different types, which were classified according to the respondents, are reviewed later. There was no place for natural groups in the survey part, although there might have been some kind of co-operation in filling up questionnaires. The response of customers in part I served the intended purpose. However, it was considered of little relevance, in proportion to the expected efforts which would have been expended, to survey customers of the organisations in part II. This calls for possible focused research in this particular area.

The role of 'middle managers' was not clearly defined in the organisations researched. This fact, coupled with the plan to solicit responses from managerial users, influenced the choice not to directly target those middle managers while distributing the questionnaires of part II. In addition, Part I showed that the difference between the inputs from operational managers and users was not discernible. Therefore, one managerial user questionnaire was produced and distributed to users with managerial capacities. The responses have indicated that all returned questionnaires were filled by operational and middle managers.

Similarly, the researcher concluded that it was necessary to have a separate classification for the MIS/computer managers (as one type of respondents) which was adopted in part II. This came as a result of analysing the interviews of part I for technical details, as well as rethinking the whole situation. The decision was to solicit those details from the most senior technical person when possible (or his deputy). This involved distributing only one MIS/computer manager questionnaire in each organisation.

In each of the organisations, one needed a senior management view that could be arrived at by an extensive top level questionnaire focusing on strategic issues. A similar point was needed for the distribution of the MIS/computer manager questionnaire, which was seeking technical and management related matters. The managerial user questionnaire was the more general and widely distributed. With consideration to the size of the organisations, in terms of the number of employees, fifteen of the latter type were handed to each liaison officer.

An understanding had been reached with the liaison officers to ensure that the senior manager and the MIS/computer manager filled in their respective questionnaires. The proposed persons to fill in the managerial user questionnaires were also discussed but it was left up to the discretion of those contact people to make the final choice of managerial users to do this job.

Questionnaires

The questionnaire was the instrument of choice for executing part II of this research. There were three types of questionnaires namely senior manager (white), managerial user (orange) and MIS/computer manager (blue). As indicated in the brackets following each type, different coloured papers were used for the three types. This was intended to help in the distribution and collection of those questionnaires (for instance a liaison officer would ask after the 'orange' or 'blue' questionnaire! which were distinctive since the majority of office paper in use was white). The white colour was considered more appropriate for a senior manager as the secretary would normally do the follow up. It is worth pointing out that some of the questions were common in all three questionnaires. There was also limited planned overlapping between questionnaires. The overlapping questions are referred to as 'triangulatory' and served the purpose of validating details obtained from multiple levels. A list matching those questions in the three questionnaires is included in appendix III.

The questions contained in the three types of questionnaires were formulated in accordance with the analytical framework and the findings of part I of the research. An illustrative list of the literature which included (Baily and Pearson, 1983; Sanders, 1984; Kanter, 1984; Raymond, 1985; Segura, 1985; Franz and Robey, 1986; Baroudi and Orlikowski, 1988; Sethi, 1988; Davis, 1989; Doll and Torkzadeh, 1989; Straub, 1990; Al-Alawi, 1991; Jarvenpaa and Ives, 1991; Glorfeld, 1994; Goodhue, 1995), was useful in guiding the researcher in the preparation of the questionnaires. However, there was no particular dependence on any piece of work and only a few had useful instruments that gave some insight for the purpose of preparing the questionnaires.

Senior Manager Questionnaire (White)

This questionnaire was directed at senior management and comprised 5 parts containing an overall total of 106 questions. The first part solicited factual questions related to general planning and organisational details, planning and decision making affecting procurement and sustenance of IS. The role of IS in strategic planning was probed in the second part. This was followed by questions

concerning IS value and organisational contribution in the third part. The fourth part went deeper into further investigation of the direct role of IS. Part five looked at the importance of certain factors to IS evaluation. All parts except the first requested the answer to be ticked on a Likert scale with seven 'points' which gave a wider range for the respondent. This was considered particularly important for the interpretation of answers in comparison to the rather limited five 'point' scale.

Managerial User Questionnaire (Orange)

This comprised 2 parts and contained an overall total of 51 questions. The first part covered questions concerning availability of documentation and training, besides finding out if the respondent was a user of IS and sits on particular IS related committees. General organisational and impact questions were included in the second part.

MIS/computer Manager Questionnaire (Blue)

The MIS/computer manager was considered the person to respond to all technical questions. Out of a total of 3 parts containing 96 questions the first and second parts solicited IS technical details. The third part was more concerned with the contribution and impact of the IS at the organisational level.

Similar to what can be said about the interview schedules, it is extremely difficult to show exact linkages between contents of questionnaires and the research questions. Each sub-instrument (used to emphasise that the researcher was the main instrument and what he used were therefore sub-instruments) was deemed essential in contributing to enhancing the clarity of the sectography. This should imply that a less clear picture would have been produced if one had managed without any of those sub-instruments. Naturally, further corroboration came from extensive collection of the secondary data. The Arabic and English versions of the questionnaires are included in appendix III.

A Justification for the Use of a Survey for Part II

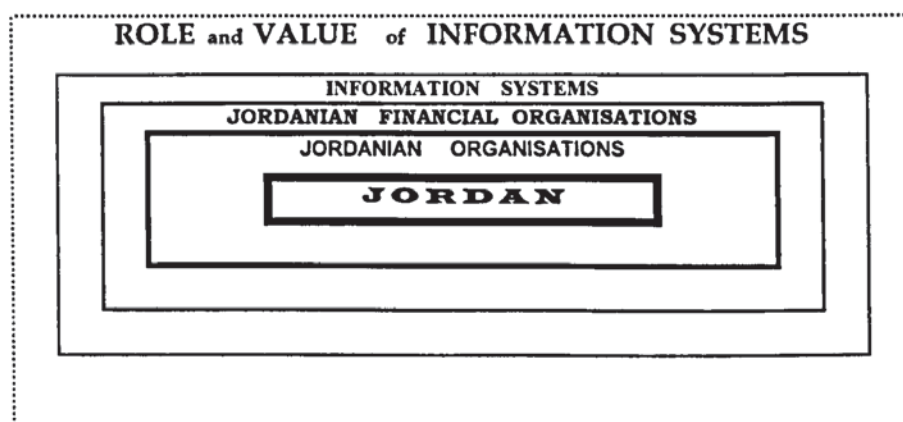
This research was heeding calls to combine methods of research for the purpose of providing a richer picture based on a contextual analysis. Since the general aim is to improve the understanding of organisational phenomena, the use of methods should be directed to serving this aim and therefore, integrating methods is seen to provide the richness for drawing a kaleidoscopic picture of the scene. In addition, the use of multiple methods can improve the robustness of the results due to the wider perspective and broader coverage. The choice of a survey for part II of the empirical work can be attributed to two specific reasons:

- 1- To be able to present a broader sectoral view by means of a sectography for the entire Jordanian BFCS.
- 2- To allow for triangulation with the other cases of part I.

6.4 Secondary Data

As well as needing primary data that were collected by means of interviews, non-participant observation, document analysis and questionnaires, the secondary data were also of crucial importance in order to complete the picture building. The following two sub-sections provide information about the scope of coverage and discuss the sources for the secondary data collection.

Figure 6.3: Scope of Coverage of Secondary Research Data



6.4.1 Scope of Coverage

Similar to the primary data, the main concern for secondary data coverage was related to the research problem of the *role and value of IS*. This has entailed extending the scope to espouse all relevant details related to ISs and their applications in organisations. In addition, complementary details about Jordan and Jordanian organisations in general, and Jordanian financial organisations in particular were gathered. Figure 6.3 depicts the scope of coverage for the secondary research data.

6.4.2 Sources

There were many relevant sources that had to be approached in order to guarantee as comprehensive a coverage as was deemed necessary. These sources were divided into three different categories namely literature, outer context, and inner context.

6.4.2.1 Literature

This category included all surveyed literature considered pertinent and useful to the research project. The list of sources includes articles from academic journals, books, magazines, newspapers and Internet articles.

6.4.2.2 Outer Context

The coverage under the outer context category contained general relevant publications that were obtained from numerous Jordanian establishments and individuals. The list of sources includes the following:

- 1- Ministry of Planning.
- 2- Ministry of Industry.
- 3- Central Bank.
- 4- Department of Statistics.
- 5- Royal Scientific Society.
- 6- National Information Centre.
- 7- Investment Promotion Department.
- 8- Computer Society.

9- Amman Financial Market.

10- Society for Banks in Jordan.

11- A Meeting with an Expert in the Jordanian Economy².

6.4.2.3 Inner Context

This included the relevant financial organisational publications such as their annual reports. Some of the organisations had their internal bulletins. The researcher was aware that some of the senior managers had published regularly in local newspapers. This was considered insightful in providing further data about the respective organisations.

6.5 Access to Organisations

The selected sector was that of the Jordanian BFCS. As money dealing enterprises they tend to value their time more than others. Therefore, to see a general manager is by itself quite an achievement especially in a culture where research is belittled with little expectation of a positive outcome. Obtaining permission to carry out research in these institutions was considered problematic.

6.5.1 Part I Access

During the preliminary stage of exploring the situation, some contacts were made with a number of organisations. The intention was to secure full access to three organisations and leave other arrangements for the survey part until a later time. This entailed staying in touch in order to maintain contact as the time between requesting access and commencing part I of the fieldwork was almost seven months.

Establishing initial contacts was made by a third party, who would introduce the researcher by facilitating senior management level contacts. It was presumed that sending a direct personal letter to the organisations would not produce the results sought. In the mean time, the researcher was requesting assistance to get

² Dr. Fahd Al-Fanek provided useful guidance to obtaining some of the secondary data and their sources.

access from anyone who could offer help whether insiders or outsiders. The presupposition, based on a prior encounter (Shannak, 1994) and the experiences of other researchers was that full access would not be granted. One example is that of Van Maanen (1978) who tried to solicit access by personally contacting fourteen police departments without success. The access was only granted when he was introduced to the chief of the Union City Police Department, who was an insider.

Nine of the organisations contacted gave an outright rejection to granting full access and gave different reasons and excuses, if they had bothered to in the first instance. Some of those were because they were busy preparing the budget (although it was not that time of the year!), or carrying out modifications to the system. The rejections could be due to a cultural reflection of a lack of appreciation of the potential research outcome, which might be deemed to benefit the researcher and not the researched. Presumably, organisations as subjects did not consider that their interest coincided with that of the researcher. When details of access were discussed, only four organisations were willing to grant full access.

Letters from the director of research at Aston Business School and the academic supervisor (included in appendix I), were prepared to facilitate better access once in those organisations. The researcher opted not to write one himself because of the realisation that companies would give more credibility to correspondence from Academics in a British university. These letters were actually helpful on an individual level during the introductory interviews with gatekeepers and liaison officers.

6.5.2 Part II Access

Access to four of the organisations had already been obtained during part I of the research project. Contacts through third parties were made and support for early introductory interviews were assisted by two letters from the researcher and his academic supervisor (also included in appendix I). Organisations were also

promised a summarised case specific report based on collected data upon completion of the whole research project.

The access was a continuous negotiation process. The idea was to make sure that the response rate would be maximised to the highest possible percentage. Fifteen members of the sample were contacted through a third party who was well connected to those organisations. The sixteenth organisation had refused participation in part I and it was not possible to find the right third party mediator who could help facilitate access for this part. A meeting with a liaison officer was made in each of the participating firms. Further complementary work with an extensive and comprehensive follow up plan was executed.

6.5.3 Comments on Access to Jordanian Organisations

As a process of negotiation, in theory, one may obtain 100 percent access but this is time consuming. The gatekeeper lets the researcher in but in most cases can not guarantee full access. The negotiation process continues at all levels and Giddens' (1984) structuration theory, as discussed in chapter 5, may be suitable to highlight a few comments in this regard:

1- The researcher, with the aid of a third party, established initial contacts by drawing on two social structures namely legitimation and signification. The discourse, as expressed by means of verbal contacts and written correspondence, has conveyed a message of the importance of research to the national economy, and explained the researcher's intentions to learn from organisations rather than lecture them about their work. None of the responses for part I or part II were obtained without a third party contact as the only organisation that was directly contacted had refused to participate in part I and part II and the researcher did not feel it was possible to pursue the follow up. Depending on how solid the contact was, the introductory letters from the researcher and his academic institute were not always needed. In some cases they were withheld because of anticipation of negative reaction, since the access had already been granted. This is cultural as letting in the researcher in the first place is a sign of trust while

showing those letters unnecessarily and without being requested would have given a false impression and left room for mistrusting the researcher.

2- Drawing on a structure of signification in their organisations, some gatekeepers not only let the researcher in, but through their interpretive schemes paved the way by facilitating in-depth access and research execution. It was surprising that those managers would not draw on the structure of domination, as a prerogative of their position, by enacting power through their control over the organisational facilities. They were explaining the significance of such research efforts in order to solicit help from other employees in the organisation. As an unexpected result, some of those even offered help in introducing the researcher to senior management of other organisations.

3- Contacts by some third parties resulted in letting the researcher in. However, the managers in those cases did not value research or pay much attention to details. They used their power to facilitate access through a gatekeeper. It was left up to the liaison officer, and depending on his enthusiasm for the research, or more correctly the researcher, he would expend a proportional amount of assistance in guiding the access for the execution of the research.

4- Better responses were obtained when the initial meetings were based on an explanation of the significance of research to a semi-technical person.

5- On a departmental level and some individual levels, the researcher noticed that part II questionnaires were photocopied. It could mean that, in those cases, they were considered personally or departmentally useful.

6.6 Summary

The following figure 6.4 provides a concise summary of essential ingredients for the data collection design.

In addition to the previous chapter 5, this chapter has given an elucidation of vital details related to how the data was collected and where from. Therefore, Chapters 5 and 6 constituted the basis for data collection as deemed necessary for investigating the phenomenon under study. In the following chapter 7, the thesis

presents the data analysis that covers the four cases of part I (four organographies).

Figure 6.4: Data Collection Design

<u>TIME SPAN</u>	: Exploratory Part (Part 0) [8 weeks] Multiple case study (Part I) [12 weeks] Survey (Part II) [5 weeks]
<u>UNIT OF ANALYSIS</u>	: Organisation
<u>POPULATION</u>	: Jordanian Public Share-Holding Financial Organisations (JFOs)
<u>SAMPLE</u>	: Four JFOs / Case studies (Part I) Whole Population (Part II)
<u>DATA COLLECTION</u>	: <i>Primary</i> Interviews & Questionnaires Document Analysis Non-Participant Observation <i>Secondary</i> Literature Comprising Academic Journals, Books, Magazines, Newspapers, Relevant Financial and Organisational Publications, General Relevant Publications and Internet Articles

Chapter Seven

DATA ANALYSIS: FOUR ORGANOGRAPHIES

7.1 Introduction

Having described the background, focal and data theories, the analyses of parts I and II of the fieldwork commence in this chapter and continue in chapter 8. As stated earlier, the analytical frameworks discussed in chapter 5 constituted the general basis for data collection and analyses. Initially, individual cases of Part I of the fieldwork are fully analysed and described. This is followed by the presentation of the analysis of the survey of part II in chapter 8. Further analyses and linkage of the outcome to the research questions involving cross-case and cross-parts analyses is the subject of chapter 9.

Part I of the fieldwork included four JFOs with common characteristics. All of the four cases were banks (JFOs) offering more or less similar retail banking services for domestic customers and businesses and operating in the same environment. They have traditional national branch networks with limited international work. Although small by international standards, those banks were large Jordanian public share holding companies as classified and listed on the Amman Financial Market. The actual business of those banks is based on corporate banking. Evans and Wurster (1997) explained this as charging higher rates to borrowers than the rate banks pay for customers' deposits. This mandates forging close relationships with corporate customers.

In general, the organisational structures of banks are formal (Bjørn-Andersen et al, 1986) and Jordanian banks are no exception. The top management in those organisations includes the board of directors, the Executive President (EP) and the General Manager (GM). In the majority of cases, the EP is the chairman of the board of directors. The EP and the GM are the decision-makers regarding the involvement of other senior managers and are the persons who decide how senior those other managers are depending on the management strategy and style.

The four cases are all Jordanian public share-holding organisations. The Jordanian government may, like any other potential stakeholder, opt to buy shares when they are first issued. However, governing the bank is decided by voting which is contingent on the collection of a large enough proportional majority of votes. The voting takes place during the annual meeting of the stakeholders. Boards of directors are usually elected for a period of four years and the individual ownership by law is restricted to a maximum of 10 % of the paid up capital. The public ownership has its ramifications as regarding the selection of top management of banks or other Jordanian public share-holding organisations for that matter. Managerial appointments and promotions follow the choice and politics of top management. The initial political choice propagates further repercussions that clearly affect the entire work of organisations.

Similar to other countries, the central bank of Jordan regulates the work of the banks and financial companies sector. However, the CBJ does not control those local banks. The competition amongst Jordanian banks is not even. Although most local banks are large according to AFM classification, some are much larger than others. To give the feeling of this difference in terms of the share price (March 1999), one bank had a price per share of 0.52 JD (the par value was 1 JD) as compared to 222 JD for another (the par value was 10 JD).

Table 7.1: Interview Statistics

INTERVIEWEE	BANK	ALPHA	BETA	GAMMA	DELTA	TOTAL
Senior Manager		4	4	4	5	17
Middle Manager		3	6	11	6	26
Operational Manager		5	6	11	3	25
User		5	5	5	3	18
Customer		3	3	3	3	12
Natural Group		2	3	2	0	7
	TOTAL	22	27	36	20	105

Table 7.1 illustrates the statistics related to the interviews carried out in those four organisations. In order to conceal the true identity of the participating organisations, the banks are referred to as Alpha, Beta, Gamma and Delta respectively. A standardised format based on the research analytical framework

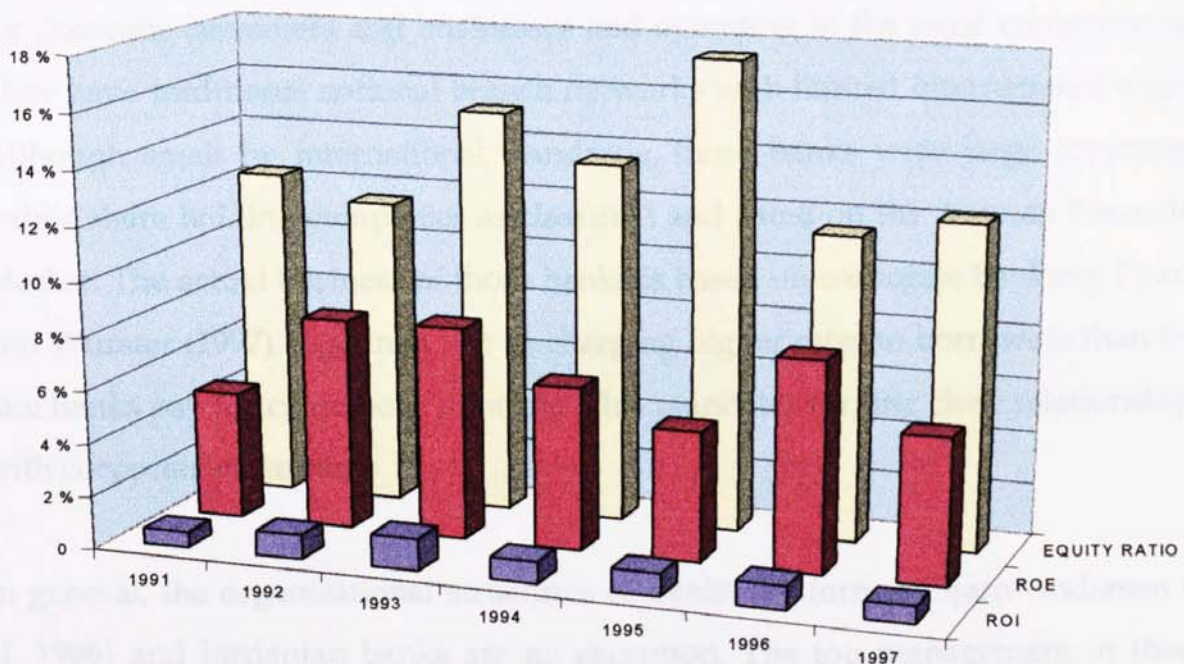
is used to describe the four organographies. It includes coverage of the content, process, context and context and process linkage.

7.2 Alpha

7.2.1 Case Overview and History

This is a large Jordanian bank with around 300 employees in the head office and branches. It is an investment¹ bank but due to convert into a comprehensive bank in order to offer all services that are usually provided by fully commercial banks covering the complete range of customers. The total assets were worth approximately 250 Million, the stakeholder equity was over 30 Million JD and the paid-in capital is 20 Million JD (for 1997). Figure 7.1 shows some economic performance indicators for Alpha over the past seven years.

Figure 7.1: Economic Performance Indicators² for Alpha



¹ An *investment* bank is not licensed to grant uncovered withdrawal facilities to clients like commercial banks. In addition, it does not give out loans that have only foreign currencies as collateral. Bankers believe that the CBJ, which had restricted issuing licenses to new banks, looked for a way out of the imposed constraints by allowing investment banks rather than the restricted classic *commercial* type.

² To operationalise the economic performance indicators, they were considered as follows: ROI = Profit After Tax/Total Assets, ROE = Profit After Tax/Shareholder Equity and Equity Ratio = Shareholder Equity/Total Assets. (Indicators are multiplied by 100 to work out percentages as needed for drawing the figure).

The bank was founded in 1978 as the first investment bank in Jordan. The general management and head office are located in the Jordanian capital city Amman. It has a medium number of branches covering the main cities in Jordan with one offshore banking unit in Cyprus.

Its advertised mission is to provide excellent investment and banking services that meet the needs of the market and clients and the motto is:

'Our gracious customer,.. if we satisfy you talk about us and if you notice a shortcoming talk to us'.

Alpha is generally known to the public as the bank for special investments, or as they put it 'the bank of the élite'. Although a public share-holding company, the chairman of the board and the recently promoted GM (early 1997) are father and son. The father was formerly the chairman and EP and also the GM with his sons occupying key positions in the bank.

7.2.2 Content

Alpha has been using computers ever since it was established. The system is used to support the operations and was introduced in the branches during 1982. The bank operated an old Wang system that was relatively slow and lacked many technical capabilities. Operating at its full capacity, the Wang system was sufficient to serve the head office and those few existing branches at that time. Central accounting also used an old NCR (Facit) system before the Wang system. The NCR work was manual and so was the verification and the transfer to the general ledger. The present hardware is based on two interconnected Data General systems for both operational use and system software development. The two systems have altogether approximately 120 terminals. Most of those terminals are in the head office. The Data General system was originally purchased from the consulting company who were hired to advise on technological affairs.

The bank has 7 Auto Teller Machines (ATMs) and their connection to the system was established in early 1997. This was an additional infrastructural investment

which was necessitated by the realisation that a large proportion of the over-the-counter operations were related to withdrawing money from customers' current accounts. Alpha's SWIFT (Society For World-wide Interbank Financial Telecommunications) system is connected via a MODEM with a dial up line that is activated twice a day. The branches do the work manually as SWIFT is only connected to the head office. In theory, the system hardware capabilities allow for a possible connection of 1000 screens but the speed of processing is already slow and attracts frequent complaints from users. The system is in dire need of enhancement to memory and processing capabilities. In addition, the bank uses approximately 70 stand alone PCs for secretarial work and support activities.

The present system is based on a 3GL (third generation language), uses relational database and was Arabised based on the ASM0708 standard. The core system itself had been purchased and the modifications were made in-house. Although the system works on-line, it is not-teller based but mostly manually supported. The VISA operations are fully automated and magnetised cheques, as required by the CBJ, are processed with the available MICR system. The full list of the system's applications is not yet complete. For example, Alpha has computerised letters of guarantee (L/G), loans and bills but not letters of credit (L/C) which are still entered manually. The treasury and foreign currency works are handled manually and only margin trading³ is automated.

7.2.2.1 Impacts of IS

As can be said for all cases, the IS is useful. Generally speaking, banks sell services and compete in providing those services. *It is a competition of creativity with the aid of the IS.* Ever since the establishment of Alpha, its management has realised that the amount of processed transactions could not be handled manually and wanted a system for making things easier and faster. The problem was not with what to do, as related to the banking operations, but rather how to

³ Margin Trading is borrowing part of the money to buy shares of stock. It is supposed to increase the percentage of profit if the stock price goes up but it also increases the loss if the price goes down.

actually do it without resorting to an expensive IS. In addition, they have 'theoretically' realised that, as expressed by a senior manager:

'The information system is a tool to serve the organisation in achieving a competitive advantage against other organisations...the more comprehensive the system the better it will serve the organisation and its goals'.

The original intention was to keep things going. The strategic dimension was a sign of luxury to an organisation that had a main aim of trying to get the work done. Therefore, in the light of considering the efficiency as compared to the planned objectives all the used systems can be safely considered efficient. As far as the management was concerned, the work was done almost to the levels sought and therefore one could also add that the system was effective. From that same perspective, the perceived impacts were identical to the strategic objectives. For a more insightful look, the focus now moves to covering of the interpreted organisational and individual impacts.

Organisational

The use of ISs in organisations leads to intended (planned) and non-intended consequences or impacts. As for the organisational consequences, one can distinguish between two different levels of use as strategic and functional.

Strategic:

Alpha's main concern was with the running of the business on a day to day basis. The management expressed that they have a strategy but the majority of their middle and operational managers did not share this view. The centralisation of control and decentralisation of work is something Alpha shares with the other banks as can be observed from the organographies of those other cases. The overall control of the total banking transactions has become better and helped avoid the daily mistakes and also their rectification. However, this control is centralised in a few people on the top.

It is worth pointing to the fact that the actual strategic planning was very modest. This goes for both corporate strategy and IS strategy. A senior manager who was

a member of the system development committee remarked to this effect when stating:

'We intend to have a system strategy for the coming years based on the use of the computer'.

Therefore, it is a case of centralised control by the head office with the senior management having a strict team on top. One thing the new CEO did was to introduce a change to the authorisation system. The current system is sophisticated and is used to decide on authorities based on responsibilities.

The work of control and monitoring of the business is executed by having many committees. A senior manager is usually a member of two or more of those committees. There are actual problems in fulfilling the objectives (strategic goals). One manager expressed the problem arising eloquently by stating:

'Well, the problem is between a committee that recommends and top management that does not approve due to cost involved cost'.

Although management was convinced and keen to have a more advanced system, the present situation related to what systems are actually available was expressed by a middle manager as:

'We do not have MIS or DSS and the management knows this but is not willing to invest. There is a need to change system for the purposes of the management and the organisation'.

Another middle manager gave a more pessimistic opinion when stating:

'The strategy here is to delay purchasing new equipment till as late as possible unless absolutely necessary'.

The existing IS is therefore below the level of MIS as it still requires more comprehensive databases. There is no customer page containing accounts, deposits, loans and other useful details. Forecasting is still carried out independent of the system and Alpha has budgeting which includes manpower, capital and business budgets. The IS produces a general ledger for the head office and branches. It makes available to top management all accounts and expense details related to customers, departments and branches.

Functional:

In principle, organisations require ideal systems that do a lot for very little. The functional expectation from Alpha's senior management perspective was expressed as:

'We are in great need of keeping up with technological advances...the performance should increase without adding to cost...the return now is negative against cost...'

Similar to what can be said for other banks, the dependence of the banking operations in Alpha on the IS was evident. A great portion of the work that is traditionally done in the back office is being executed through front office dealings. However, one can not say that the back office operations were completely abolished. As a query system, the IS is used for finding out details related to a customer such as balances and previous transactions. This is necessary for operations like approving cashing transactions over the counter.

The order of work differs between branches, as some of them are better lenders. These have to increase deposits in order to achieve self-sufficiency for branches instead of resorting to the head office for borrowing money. The dynamics of those operations have been facilitated by the use of the IS which, from a customer view point, provided faster, more accurate and customer-accepted services.

In general, they have daily, monthly and quarterly reports for the head office and branches. These are the most important summaries for the management. For instance, the end of day report is their insurance policy for cash in treasury. At the end of the month, the accounts are closed and a profit and loss report is produced. In addition, they produce all the reports related to sources of profit and expenses for branches and the bank position on foreign currency. In actual fact, the job of the branch manager has become focused on marketing as the control of operations is centralised because of the system. Branches can also produce their own reports as needed.

There has been an increasing demand for more specialised reports and this was discovered upon realising the capabilities of the system to produce various

reports. Obviously, there was still a noticeable and strong dependency on the paper work in Alpha. Subsequently, this implies that there was no reduction in the use of paper but only the manual work became less. The system provided new services like the ATM and VISA and reduced the need for unskilled workers but increased the dependency on skilled workers. In fact, the IS has freed employees time to be able to do other tasks when needed. One manager expressed his opinion about what difference the IS made by saying:

'Without the system there is no flexibility in my work to arrive at information in a different way from different angles to serve the management. Working manually we need many books and many employees. I had 7 employees in my department and now we are two'

It is highly appreciated within Alpha that there has been time and effort saving as well as saving expenses and managing quick information that affected decision-making. In addition, there was the indirect way of increasing profit by, for example, being able to accurately calculate exact interest. Furthermore, Alpha was aware of the opportunity that would have been forsaken without the IS in terms of, for example undertaking high risk due to lack of full investigation before authorising a loan.

The managerial users repeated the intangible benefits of the system. This is clearly indicated in one of those responses that said:

'Noticeably the speed of work is much faster. We have less number of employees. The work is more accurate and the monitoring is much better. (We have) an instantaneous check on the debit/credit balancing. We have facilities to store information for longer time.'

It can also be said that the introduction of the system made the middle management more important as they were needed to maintain appropriate contacts between subordinates and their senior management. In addition, middle managers freed senior managers' time by providing them with executive summaries that aided their decision making. Employees perceived that the work of 'ordinary employees' has become less but the work is no longer demanding high mental abilities. The satisfaction and ease of work have improved but the security is less as employees felt they were easily replaceable. Employees seemed

to be distanced from each other as a direct result of the use of the system. This was brought about because they no longer have to physically meet to go about executing their work.

Individual

The following discusses the impacts of the IS at the individual level. This involves three types of individuals namely customer, employee and stakeholder.

Customer:

In general, customers do not trust the ATM. This may be due to lack of awareness of the usefulness of the 'plastic card'. Alpha staff give the impression that customers appreciate the bank and its clerks as if there were no problems. Therefore, they considered that their customers were satisfied. However, Alpha believed that customers change with the slightest problem they encounter to the extent that 'if customers face problems then the clerks are thieves'. This is not directly system related but the IS could be part of the problem if the customer is delayed.

In reality, these customers cared more about personal gain. They preferred a bank that has a nearby branch that is not busy and more importantly a bank that offered facilities that are not available from other competitors. Alpha is at a disadvantage because it does not have many branches in comparison to some of the other competitors and as one customer put it:

'I see no extra services offered here, I realise the bank offers ATM and VISA cards but these have become standard. Waiting is short but credit facilities are not good'.

In summary, the IS improved customer services as demonstrated on the counter when withdrawing or depositing money, in having access to electronic cards and in the detailed statements they receive. As a result, customers have more confidence in the handling of their accounts.

Employee:

The system is considered to have distinguished between employees according to their skills and the management reported that some of those skilled employees have advanced to leading positions. However, it was widely accepted that the system erased part of the experience of former employees. In addition, the individuals had the opportunity to get some training. In Alpha, training was mostly 'on the Job' and the training department was more concerned with the general banking operations involving the use of the system.

Some employees were under the impression that they were constantly being watched which caused a feeling of unease. They believed that they did not reach the minimum level of satisfaction with their jobs. They were referring to dissatisfaction with the authorisation system ('the management was pyramid shaped with one on top'), their salaries, routinisation of work and the fact that they had little flexibility in dealing with customers.

The feeling of deep uncertainty resulting from lack of long term strategic planning was apparent. An employee expressed his unease when saying:

'We feel lost and don't know what the bank policy is..it is just not clear'.

In addition, Alpha employees feel the stress of the direct friction with the customers who act on impulse. This is cultural rather than closely linked to the use of the system. A manager explained this as:

'Customers deal with bank clerks as if they had the magic wand, perhaps it is trust and honesty on the part of the customer. The clerk fills forms and clients sign...if there is a problem it is the clerk's fault and his system then '.

Shareholder:

What can be said about Alpha's stakeholders is applicable to the stakeholders in the other cases. They would like to see their bank with advanced services that satisfy existing customers and increase customer base. Other than that, the IS has no impact on stakeholders except for being able to access, if they wish, more insightful reports concerning the aggregate banking operations.

7.2.2.2 Determinants of Impacts of IS

The impacts of the use of IS were discussed in the previous sub-section. The specific factors and considerations which might have played a role in the realisation of those impacts are dealt with in this sub-section. Further discussion on the determinants of impacts is provided while presenting the cultural and political perspectives of the context and process and in the structural analysis of the context and process linkage.

Technical

The original system was written in 1979 and has undergone a number of modifications, or as one manager described it 'plastering'. Despite being the first amongst the banks in achieving full automation and being able to supply the CBJ with the regulatory reports on disc (it was formerly done on paper), it is a continuous process of rehabilitating old systems to squeeze out as much as they could. As one employee implicated the management when remarking:

'They don't want to buy, we are still fixing 286's and 386's and it is 1997...'

But there are a lot of things to do. A manager expressed this when saying:

'We need a lot of co-operation and understanding from the management. We could have e-mail in the branches to our best interest but it is not available now. They consider that we are sucking what we can from left over technology and modernisation is a future consideration'.

Yet, the 1998 annual report emphasised the increase in pre-tax profits by 20 % to 2.4 Million JD, but also mentioned that the bank continued to modernise the IS with the introduction of the latest technology. This contradicts with the actual situation as interpreted by the researcher and expressed by the employees.

Furthermore, the IS department is relatively small with only 9 employees and the evaluation of IS is almost non-existent in Alpha. It was based on listening to complaints. If everything is working normally then the system is okay. It was a case of fighting to have a screen as a technical person expressed it:

'We got a mother board for this broken PC and trying to get it to work with the minimum required configuration...they are all fighting to get it'

Therefore, evaluating such a system would be a luxury in circumstances such as the one explained above. As the computer manager put it:

'we do not have scientific evaluation of the system and this is done on case by case basis and as things develop, it is continuous and the system is changing and not static'

Organisational

The management were forewarned about the capacity of the hardware system but apparently tended to ignore those problems. They had a crisis during 1992 when the system collapsed. A previous warning about an anticipated failure to the system had been ignored and the management response was that there was no need to panic and frighten everybody. It was a real case of emergency to recover the database. It was a case of the new GM wanting to prove himself by showing profits which was translated into cutting expenditure. The system is suffering as a result of such policies.

A senior manager who expressed this by stating that 'the employee belongs to the 31st of the month and the 2 p.m. bell' lamented lack of commitment of subordinates. This in itself is a determining factor because it limits the scope of innovativeness.

The researcher views that users had little to do with the design and development of the system. This could be considered a technical determinant as it is related to the system and people. However, it was a case of a 'corporate culture' translated into lack of management action to encourage such practices. The constraint was not a result of the lack of will on the employees' part.

Furthermore, it was natural to learn that employees, in general, preferred the old ways they were used to. When the change was made the resistance was expressed in a number of ways. For example, one manager explained that:

'It is a habit that some managers complain if their screen design changes slightly...this is the usual'

Environmental

There is fierce competition facing Alpha because of the large number of banks operating in Jordan (Jordanian and foreign). In theory, this should push for having an advanced IS (for the present and the future) that provides quality service to customers. However, the other technical and organisational determinants have their hindering effects.

As a relatively poor country, the macroeconomic situation in Jordan imposes added problems that make competition for the limited opportunities even tougher. In addition, the control and regulations of the CBJ are quite stringent for investment banks like Alpha but this was not a real incentive for driving the need to have a strategically advanced system. As alluded to earlier, Alpha's IS was rated as the best banking system for providing the CBJ required reports on disc while at the same time it was technically incomplete.

7.2.3 Context and Process

The historical context of Alpha was characterised by attempts to reflect a progressively successful organisation that is making profits and has a workable long-term strategy for survival. This is evidenced by their annual reports showing a steady increase in total shareholder equity. However, the net income before taxes, which continued to increase until the year 1993, went down in 1994 with the same level maintained in 1995 and 1996 and went down again to below the 1992 figure in the year 1997. Alpha distributed dividends until the year 1994, but not in 1995 or 1996; in year 1997 there was a mere 5 % ratio of dividend paid to paid-in capital. This needs to be considered against the background of claims that Alpha has continued to modernise their IS during the same period in order to support the tenet that linking IS and corporate performance in an *a priori causal relationship* is not generally valid to evaluate corporate ISs. The situation can be attributed to prevailing conditions for competition in the BFCS, as well as changes to the Jordanian national economy due to JD devaluation (50 % drop)

and demographic change resulting from the influx of Jordanian expatriates returning home during the Gulf war. The number of licensed banks has increased by five since 1989 (four investment and one commercial) and there was a tendency of depositors to keep cash. In addition, there was a concurrent outflow of savings from Jordan upon the outbreak of the Gulf crisis.

As a result of external changes of the late 1980s and early 1990s, Alpha has become very conservative when it comes to its lending policies and expenditure. In addition, the new change to senior management evidenced by the promotion of the GM in early 1997 had a multiplying effect. This has affected the IS department as clearly indicated in a remark by one of the middle managers who stated:

'The suggestion was to maintain the system for now while the required is a new system and there is no way that this is to going to happen. Our budget is 200000 JD and they are trying to cut it down'.

The resources were limited and the central strategic importance was based on how to do more for less. In addition, further pressure resulted from the recent change in management due to the added importance of the necessity and urgency to reflect positive changes especially upon the change of managerial eras. The new CEO was a relatively junior person, albeit his qualifications and experience from foreign institutes. To the employees and customers the change was not surprising because of the structure of ownership. It is a partly owned family business and this in itself is not a unique characteristic of Alpha. Other organisations have a similar style of management that is based on familial control of the senior management positions in those respective establishments.

Top management realised the fierce competition due to a relatively large number of locally operating banks. Being an investment bank was a constraining factor and the conversion to a fully comprehensive bank added more pressure in anticipation. Therefore, the worry continued to be on what and how to exploit and market the competitive advantage of the bank in order to be able to profit and continue to survive. According to one senior manager:

'The competitive advantage for Alpha is the unified service and choice of customers, dealing with those customers is 90 % personal'.

Alpha customers seemed to confirm this and one customer said that:

'I have friendship with one Alpha manager and personal dealing is what I expect and get in Alpha'.

It is worth noting that the top management efforts of doing the planning was not felt at lower levels of management. One middle manager explained his view on the strategic thinking and planning in Alpha by stating that:

'The risk is zero...they ask for zero risk...weird thinking not what one expects ...planning is short term...there are no senior managers as you say it...we have executors and minimal planning'.

Some managers quoted the ATM as a good example of the lack of planning because it was introduced on the basis that other competitors had it and not following the recommendations of their internally carried out feasibility study.

Employees at the level of middle management and below do not seem to share the view and aspirations of the senior management. Perhaps, the strategic objectives have not been passed on successfully. On top, they speak about the bank of the élite while employees reckon that it will be years before they compete with leading banks. There are different views on the quality of services and employees. The senior management uses this for creating a better image but the employees themselves do not see this as being a reality. A middle manager remarked that it is a management of 'expediency' rather than 'holistic'.

The change to management necessitated the urgent need to reflect good figures for 1997 and this explains the distribution of dividend for that year although 50 % (5 Million JD) of the increase in the paid-in capital came from conversion of reserves (the 1996 annual report showed only a total of just over 2 Million JD of reserves). Accordingly, it could be deduced that the management looked at the IS as doing the job and it was part of the vision to exploit it without having to increase investment or even the annual IS budget. This point was raised when discussing the technical determinant of the impacts of IS in sub-section 7.2.2.2.

Table 7.2 shows a summary of some of the elements of the social context in Alpha.

Table 7.2: Some Elements of the Social Context (Alpha)

<p style="text-align: center;"><u>Historical Context</u></p> <ul style="list-style-type: none">• Established as the first investment bank in Jordan during 1978• The decline of economic conditions in Jordan and the increase of competition• Chairman and Sons filled key management positions. In 1997, the one of the Sons became the GM• Continuous attempts by the senior management to reflect a progressively successful organisation that is making profit and has a workable long term survival strategy• Dissatisfaction and low morale of employees <p style="text-align: center;"><u>Social Relations</u></p> <ul style="list-style-type: none">• Senior management dependency on a close group of executives and irregarding the existing organisational structure• Management was formal and not open to general access by staff• The computer department staff carried out top management instructions as they had no other choice and tried to please everybody <p style="text-align: center;"><u>Infrastructure</u></p> <ul style="list-style-type: none">• The sources of the bank were quite limited• Employees were competent bankers who had the qualification and the experience• Management failed to value the professional consultations with the computer department because it involved re-thinking investment in technology• Initial system fulfilled early requirements and did not solicit the opinion of the users in the different departments
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7.2.3.1 Cultural and Political Perspectives

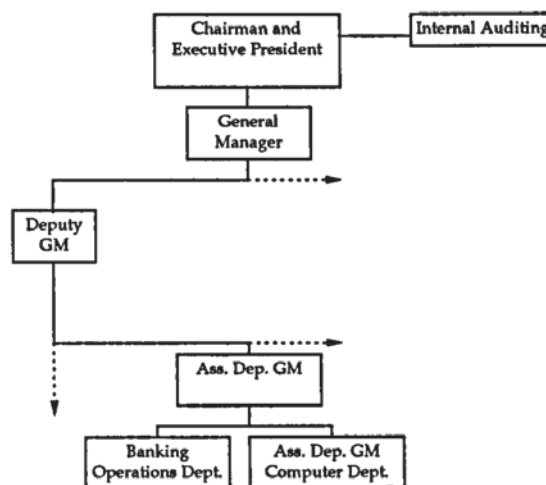
Organisations are not machines and Alpha was no exception. Alpha was an organism without a well-defined structure. Like other organisations, Alpha was a mini-society that exhibited cultures and sub-cultures in real life organisational disunity that was intrinsically political.

The responsibility to effect change lay with the senior management who considered that the IS was a tool. The change to senior management that took place early in 1997 did not actually seem to have affected the business or perhaps it is still too early to judge. There was a change to the organisational chart and figure 7.2 illustrates the hierarchical position of the manager of the computer department. In addition, the management continued to resort to committees

which was the only democratic sign of loosening the tight grip of their autocratic control. There was no real resistance to any proposed changes because of the rational realisation of employees that they had no real power to oppose changes and suggest alternatives. A middle manager lamented:

'There are certain people who decide the overall decision for carrying out the work and no decision without those people...'

Figure 7.2: Alpha's IS Management



It was clear that there was no defined strategy that could be translated in a lucid way to employees. Apparently, employees found it confusing to understand the requirements of senior management because they keep changing. A manager remarked to that effect when stating that:

'There is no strict adherence to rules and regulations and there is a continuous change of mood, for example, we were rushed to move equipment from a complete floor but the following day we had to put them back the way they were because the management changed their mind'

The subculture of the IS staff was undermined. They actually had hardly any say in corporate matters except the consulting role and that was not properly heard most of the time. It was the case of repeatedly writing reports about the situation and not being heard. The technical manager stated:

'I have submitted a report to the management about the needs and problems and have not heard a reply or even been called for a discussion. I submitted 3 reports this year without response. In November 1996 I requested a budget and do not know what has

happened until now. Departments follow up if they need something and get the approval themselves if they want spare parts. If I ask about the budget they will probably say it is there but you do not know about it'

There was a lack of planning concerning the development of the existing system. It was a case of ad hoc evolution which meant constant pressure on the computer department to resolve existing problems. The following quote from a technical employee illustrates an example of the working conditions that technical staff had to endure:

'Last night we had a technical problem and we were in until 4.30 am...one of the team came 15 minutes late in the morning and the administrative affairs immediate response was why was he late even though there is no such thing as overtime'.

Another subculture was that of users or lower-level managers who felt the tight control and realised the regimental power exercised in Alpha. They had little margin of improvisation as a direct result of the powerful restricting directives issued by the senior management. Those employees were instructed not to discuss their hierarchical positions or salaries with others or amongst themselves as these matters were confidential. The bare fact was that they were being asked to stick to their work as it was none of their business if senior management favoured 'cronies' by increasing salaries and other fringe benefits because it was considered better for work. According to employees, the whole promotion process was atypical and lacked objectivity as it was not based on performance. These are issues that workers seemed not to understand or accept and they have continuously doubted the basis for such practices. However, it should be further emphasised that those employees, who constituted the bulk of the staff, had high degree of power distance for tolerating inequality, as they were fully aware that they could not show resistance because they would have to bear the consequences. Jordanian trade unions are powerless when compared to Western counterparts. They are hopeless in situations like this and that explains the extra-demonstrated rationality and self control exercised by workers of the private sector.

There are three levels of authorisation for the use of the banking IS namely reporting as classified by the manager or loan officer, limited access and unlimited access. The use of authorisation in Alpha, like other Jordanian banks, is a valuable indicator of the importance of the position occupied by the person concerned and is, when concerning high level staff, a reflection of any organisational hierarchical change introduced. It is an additional indicator of the tight control as emphasised by one Alpha manager who stated that:

'There are two people who don't want even to give authorisation to branch managers...we call them Mr. security'.

Notwithstanding the use of the authorisation system in the formalisation of control, the management maintained an open door policy when it comes to accessing employees whereby they bypassed their superiors and that was unquestioningly an acceptable corporate cultural tradition. The strong top management continuously balanced situations in departments so as not to single out one influential department that might have exploitable political strength. The system had little effect on the organisational power structure or was not seen to have the potential for helping rectify such dysfunctional imbalances. Nevertheless, the use of IS has re-distributed responsibilities and changed authorisations given which translated into a legitimate way of *jumping the hierarchy* although the hierarchical structure was ostensibly preserved. It meant a change in role playing of persons and, in general, roles have become clearer without repetition of work or administrative responsibilities. This illustrates the 'informating' role of ISs in organisations (Zuboff, 1985).

One example of the 'jumping of the hierarchy' situation is evident when the computer manager writes directly to the deputy GM expressing his recommendations and exhortations regarding the capabilities and limitations of the system. The organisational chart, as partly shown in figure 7.2, exhibited that the computer manager, for example, was supposed to report to another assistant manager to the deputy GM. This can reciprocally be said about some direct contacts by middle managers with employees in the computer department in

order to ask them to do certain system-related jobs for them without establishing the formal contact through the manager of the computer department.

Alpha had no deliberate planned programme of change for nurturing a corporate culture. However, there was some kind of internal technical training on banking operations but this did not appear to focus on dealing with customers or changing culture. The training was underemphasised and this might be partly due to the fact that Alpha had no new employment contracts and kept the majority of their employees. This was a general policy that had to do with preserving the bank's reputation amongst the public (societal responsibility) although it was concluded earlier, following a feasibility study, that there was a possibility for reducing the number of employees as a high-taxing running cost that is not depreciable. The feasibility study has shown that the running cost of the IS was much cheaper than the cost of staff that the system would substitute. Cultural traits in Alpha were felt in, for example, the repeat of their Mottoes and as one employee expressed it:

'They (the senior management) say we are the bank of the élite but how'

Table 7.3 summarises some elements of the change process in Alpha covering the cultural and political perspectives.

Table 7.3: Cultural and Political Perspectives of Change (Alpha)

<p style="text-align: center;"><u>Cultural Perspective</u></p> <ul style="list-style-type: none">• No supportive climate or clear vision for change and lack of a well-founded and broad plan to nurture a unique corporate culture• Senior management dominated decision making and employees showed no sign of resistance• Employees doubted existence of strategy and any long term-planning. They were uncertain and felt threatened• Senior Management seemed distant from workers and their working conditions and normal contacts were formal <p style="text-align: center;"><u>Political Perspective</u></p> <ul style="list-style-type: none">• Power lay with senior management and top-down control was maintained through managers of the close circle• High tolerance of inequality (power distance) by employees reflecting traits of the Jordanian national culture• The personal interests of the employees were suppressed• Technical staff had little control over decisions related to the design and development of the corporate IS
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7.2.3.2 Structural Analysis of the Linkage between Context and Process

Similar to other Jordanian banks, at one time Alpha was pursuing the strategy of expanding by having more branches. This was a general trend in the BFCS in late 1970s and early 1980s. As an investment bank Alpha had more reason than the majority of competitors to reconsider especially around the year 1990 when the number of banks had increased by five. Therefore, the priority was to look after the customers and offer facilities for investors that would generate profits through better exploitation of banking opportunities. This was the case prior to 1997 and remained the same with the new GM.

Alpha has been using computers ever since it was established in 1978. The computerisation was limited during early 1980s and the bank was small. The procurement of the Wang system and the Data General at a later time was through deals with consultants. It can therefore be said that there was no well thought strategy behind the choice of those systems but rather a management enforcing a structure of domination by drawing on their unquestioned control of facilities in the bank. This was demonstrated by Alpha's scrutinised access authorisation plan.

The Wang system reached its full capacity of four branches in 1990 and the Data General is presently running at almost full capacity. There are regular complaints about its slow speed. It lacks memory and processing power. Similar points can be raised about the software packages. One can say that the senior management were concerned with appealing to the norms of providing good customer services as a legitimate basis for requiring an IS. In addition, they needed to exercise control over the entire banking operations. They were drawing on their interpretive scheme to realise the significance of having an on-line and inter-branch system but, at the same time, wanted to uphold the strategy of reducing expenditure.

The communication of top management with technical staff was drawing on the structures of signification and legitimation for prioritising those jobs that are to

be developed. Requirements were normally initiated at the top but particular corrections were requested by the department concerned. In addition, the senior management would communicate the significance of completing jobs and at times exercise power to make sure that jobs were completed quickly. The computer department lacked autonomy and was overworked and understaffed. They tried to legitimise the order of priorities of handling requested jobs as they had no choice but to carry out what was requested of them.

Furthermore, the management was tough and exercised power. They were continuously enforcing the structure of domination when dealing with staff. The employees were expected to be punctual in attendance and work overtime without expecting any additional pay for those extra hours. They were drawing on the control of facilities and without protection of unions, employees were under the risk of losing their jobs.

A summary of some of the elements that were included in the structurational analysis of the linkage between the context and process is shown in table 7.4.

Table 7.4: Accounts of the Context and Process Linkage (Alpha)

- | |
|--|
| <ul style="list-style-type: none">● Initial concern to legitimise computerisation as a pre-requisite for improving the banking operations and fulfilling objectives● Senior management attempt to illustrate and utilise the significance of having an on-line inter-branch IS● Senior management deciding the choice of system thereby enforcing domination through control of facilities● Senior Management communicates the structure of signification by drawing on norms for legitimising further developments of needed applications● The computer department reaction to communicate meaning by drawing on their interpretive schemes, thereby re-creating the structure of significations in order to mitigate the effects of complaints by users of the system● Continuing pressure on employees by the senior management as expressed through using of incentives and promotions when demanding more than the contracted duties and thereby enforcing the structure of domination |
|--|

7.2.4 Concluding Remarks on the Alpha Case

As a research that is focused on looking at the role and value of ISs in organisations, this section will summarise the Alpha case by focusing on IS-related issues: strategy, design and development, implementation and evaluation.

Despite the turbulence and changes affecting the national economy and the Jordanian BFCS, which translated into more competition, Alpha became more conservative in lending out money and taking no risks when demanding the right collateral. It was a state of high uncertainty avoidance. As an investment bank, the strategy was not linked to expansion and this option was temporarily postponed, as the bank had to convert to a fully comprehensive commercial bank according to new regulations by the CBJ. It was concerned with increasing investment opportunities and reducing expenditure. However, Alpha management was not successful in pushing the strategy forward because the progress was relatively slow. They were not able to change the entrenched culture of expediency through programmed training or giving out incentives. The employees doubted the structural thinking and the existence of strategic plans. Similarly, there was no clearly demarcated IS strategy. Their plans were contingent following a reactive rather than proactive mode of strategic formation. This ties in with the short-term orientation that prevails in the Jordanian national culture. Therefore, it was clear that the strategic fit between the vague strategies of business and IS was far from being the optimum. One may anticipate, by drawing on existing conditions, that the next time they will rethink their systems is upon facing a crisis and this will very likely prove costly.

The system hardware was changed twice in addition to adding peripheral units in the head office and branches. The kernel of the software was originally purchased but all following modifications were carried out in-house. The management decided on the major applications they wanted to include in the system, a number of which are still incomplete. Technical staff took the responsibility of doing the system analysis and the programming, and user

participation was limited. The management expected the computer department to manage the design and development of any new application and the computer department was hammered into getting it done as soon as possible. The implementation of the system followed a similar route to the design and development. Both stages were, in practice, carried out simultaneously because the new applications were developed in-house and had to be tested. Due to the size of Alpha, this process was relatively easy.

Alpha had never formally evaluated their system. It was a case of fulfilling those requirements submitted by the senior management and reducing complaints by resolving users' daily problems. In addition, the computer department had to make some modifications to newly developed applications. The users appreciated the system because of the ease of use. Senior management was kept informed about technical problems through regular reports submitted by the computer department. Furthermore, the fact that the system was on-line and inter-branch made it appeal to customers who did not notice any shortcomings and although Alpha was classified as a large bank, it did not have a large customer base or deposits. It can be concluded that the evaluation was informal and based on ad hoc assessment of the number of internal or external complainers.

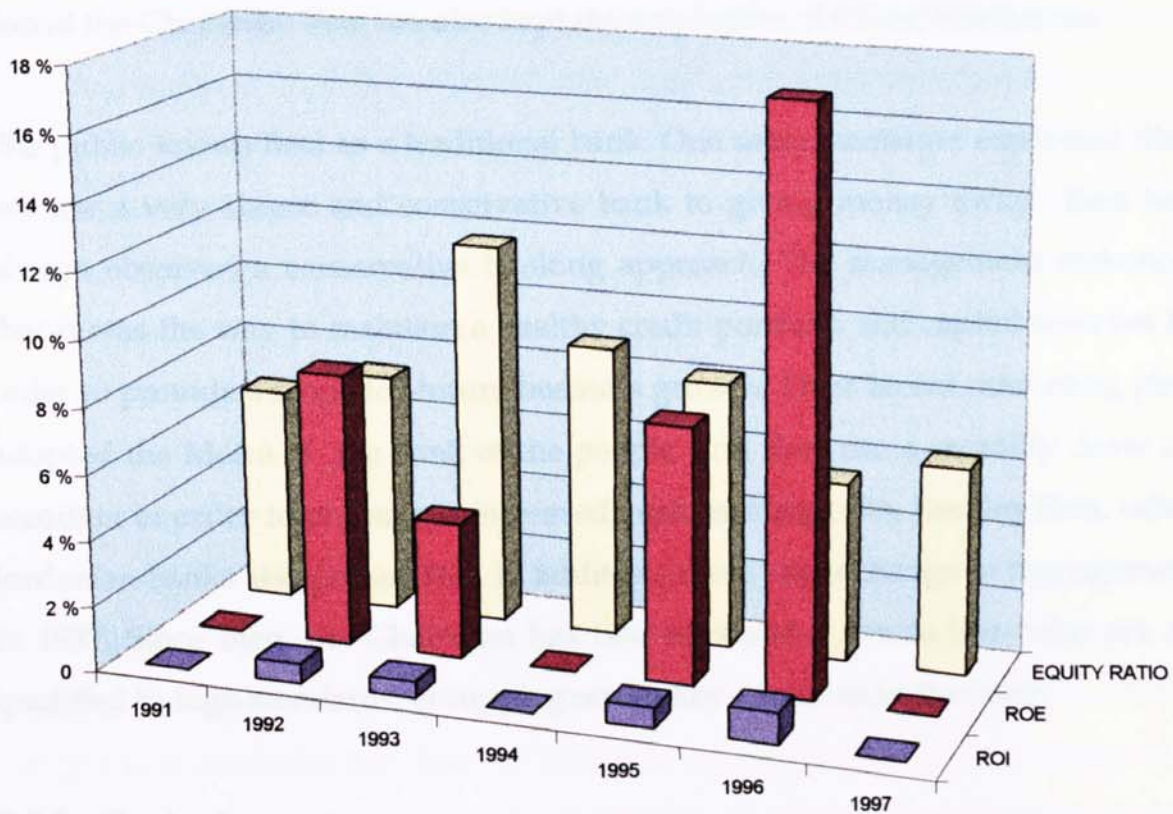
7.3 Beta

This section presents the second organography which is given the pseudonym Beta. Details related to the number of employees interviewed and their types were shown in table 7.1.

7.3.1 Case Overview and History

Beta is another large Jordanian bank with an overall figure of over 1200 employees. It is a commercial bank with a paid-in capital of just over 20 Million JD, total assets of over 530 Million JD and a shareholder equity of over 33 Million JD (in 1997 budget). Figure 7.3 shows some economic performance indicators for Beta over the past seven years.

Figure 7.3: Economic Performance Indicators for Beta



The bank was established in 1960 as the third Jordanian bank and the sixth amongst all operating banks in the Kingdom at that time. The head office is based in Amman and has recently moved to its newly built headquarters after years of operating with a distributed head office that was located in different locations in Amman. It has over seventy branches and offices⁴ covering Jordanian cities and the West Bank and Gaza (Palestinian National Authority Area).

A fundamental basis for Beta's strategy over the years has depended on achieving growth, sustaining reputation and maintaining their customer base. Therefore, the bank has pursued an expansion strategy by extending the network of branches in the main Jordanian cities and rural areas. The intention was to extend the customer scope so as to cover all citizens of the Kingdom. In 1986, Beta bought out Chase Manhattan's branch in Jordan. The deal involved all assets and a licence that permitted expanding foreign currency dealings. This acquired

⁴ An office can be considered as an extension to a branch that is not geographically located in the same area. The CBJ restricts its work to a limited number of activities (e.g. Cashing money and foreign currency exchange). These are known as sub-branches in the UK.

branch became one of the important branches for Beta and was managed by a Son of the Chairman. Beta has also kept the employees of Chase Manhattan.

The public knows Beta as a traditional bank. One senior manager explained that 'we are a very classic and conservative bank to giving money away'. Beta has always observed a conservative banking approach. The management reckoned that it was the way to maintain a healthy credit portfolio and capital reserves in order to provide a scope for future business growth. Their recent marketing plan adopted the Motto of 'the bank of the people' and they run a monthly draw on accounts in order to encourage increased customer deposits. Besides Beta, other Jordanian banks also pursue this. In addition, there was a change in management in 1987. Since then, the Chairman has two sons and a son-in-law, who are all qualified to high standards, occupying senior key positions in the bank.

7.3.2 Content

Beta had six different hardware systems that were used simultaneously but did not communicate with each other. The work was managed on a day to day basis and the management was particularly concerned about how to phase out the old systems in a relatively quick and swift manner without many disturbances to the work. The old systems were brought in for varying reasons. For example, one of those systems was bought as part of the assets of a bought-out foreign bank. This system, with all its limitations (including the use of English as the only interfacing language), is still working in certain branches and departments. In fact, the experienced employees of the acquired bank were re-employed as part of the package that had been negotiated. Those employees still favour their old system to all others that they were exposed to ever since they experienced the change of employer.

With the exception of those branches in the West Bank that operate their integrated on-line and inter-branch system, the rest of the hardware in Beta can be described as comprising a number of independent systems for the head office and branches. They range from IBM to Tatung. They have no provision for the

connections of ATMs. The basic configuration of those systems was based on client/server architecture. They used branch LANs and contacts to branches could be made via a MODEM. On the other hand, the software applications were written in-house with the kernel purchased from a software house. The situation in the branches prior to the introduction of the new software (during 1998) involved different hardware set-ups but a unified version of the software that had been in use for the previous five years. Beta had formed its own software company to look after its banking system.

Beta had previously experienced the use of systems like the DEC PDP in six of their many branches. The software had been written in COBOL and the language of interface was restricted to English. The SWIFT service is provided to all branches through the foreign department. Written forms are delivered manually and put in a queue for transmission upon the opening of the line. An example of a typical installation might help give better insight about running those set-ups. In this branch, which is the second largest, they had old HP hardware that was replaced by some IBM machines that used the RISC (Reduced Instruction Set Computing) technology. The number of terminals in that branch was 27 and they also had 9 printers. The software was written in SQL data entry forms and the system used UNIX as the operating system. Some programs for accessing data were written in the Pro C programming language. The database is within the ORACLE environment. It was an off-line system and did not offer customer services. In addition, it did not have any ATM connected. Available software modules were for retail banking and included deposits and accounting, credits and facilities and bills. Branches had their own contracts with a software house for the maintenance of the hardware system. The Finance department has a Novell LAN (Local Area Network) with tailor made software package and uses Excel for handling the consolidation of branches. They are also in charge of the financial control and help to provide data collected from branches. In addition, the finance department does the central monitoring and accounting, the control of fixed assets and the procurement and purchasing.

The second half of 1998 witnessed the phasing in of the long awaited new system. Beta wanted to use the present hardware and install the newly written software. The contract for providing the complete system had been awarded to a Lebanese software house whose programmers have been called in to implement the system and make the needed changes on-site as they unfold. The new system uses the UNIX operating system and the ORACLE environment. So far, as of February 1999, the new teller system was being tried in two branches. It appeared as a huge improvement on the previous situation but it is still early to judge this system. The ATMs are available in certain locations but have not been connected to the system yet because their software programme is still under development.

7.3.2.1 Impacts of IS

The researcher reckons that it is important to have one unified system serving the whole bank but it was not the case with Beta. Despite the fact that the bank was using different systems⁵ that were on-line on their own but not inter-branch, the impacts did exist as the banking operations could not be sustained manually for a period longer than one working day. Prior to 1987, the old management considered that investment in technology would have been high relative to the paid-in capital and therefore did not value the need to make proper investments. A senior member of the post-1987 management team summarised the current corporate view on the use of the IS by stating:

‘To face the future we would like to do a better job with less number of employees with the aid of technology, we might for example lose business otherwise due to high costs’

According to the senior management, Beta had few strategic aims that translated the bank’s vision and were echoed by the middle managers. Besides centralising to improve measures of control, they wanted to be more effective by, for example, transferring the work of the back office to the front. This will for instance, operationally mean clearing cheques from the point of sale instead of requiring further follow up. However, the management considered it possible to

⁵ Throughout the analysis of the case of Beta, the IS refers to those different systems available in the various departments and branches since they had no one single on-line and inter-branch system.

plan ahead for empowering employees without jeopardising their core emphasis on centralising control. They envisage that customers who expect a high level of service will not feel the difference or even notice that the decision is not being taken in the branch.

What has been achieved in line with the strategic aims is another issue that will be discussed next under the headings of *organisational* and *individual* impacts. In the context of the work of his department, the financial director voiced the strategic plan to centralise by removing accounting activities from branches. He reckoned that centrally approving transactions and notifying branches about wrong transactions would guarantee accuracy of operations.

Organisational

The impacts on the organisational level can be classified in many ways but the most appropriate, in accordance with the analytical framework of the research, is seen as covering the two levels of strategic and functional operations.

Strategic:

The issue of strategic planning seemed high on the list of priorities for Beta as part of the plan for change. However, as explained in the following quote by a senior manager, it has not been achieved yet:

‘We do not have a clear and written vision or strategy for the bank. Nothing written but rather thought of. Our strategic thinking takes many factors affecting strategic goals into consideration. We have by far outperformed Gamma in growth, profitability, branching and aggressiveness in the market’

Similar to the case of Alpha, Beta considered that preparing a 5 year plan was a luxury that they could not afford because of the numerous constraints and continuous unpredictable change. Therefore, the safe option was seen as based on contingency planning and crisis management. A good example of those constraints is the national problem of maintaining economic growth and the possibility of concomitant action by the CBJ to introduce new restrictive monetary measures. A middle manager pointed to the permanent state of change

to regulations and directives by referring to a common local business proverb which says 'if you do not like Jordanian regulations then wait a minute'. A fact known to the majority of Jordanians is that ever since the independence of Jordan in 1946, the Monarchy has had on average a time between governments of approximately 18 months. That also partly explains the general expectation of the constant flux of change that, in part, affects the business environment.

Subsequently, the IS strategy did not exist but, in theory, it was considered the core of the business strategy. Beta had detailed requirements of what they wanted the system to do and the management envisaged that the IS can be used to manage automation but not people. Systems do not govern organisations but people do. Additional points related to aspects of organisational control are the perception of the management that the automation staff had to obey orders and were supposed to do what was requested of them.

Beta had many committees for the different levels and types of work. For example, in the credit department they had no authorisation system but the work of granting facilities had to be approved by one of three committees namely departmental for small loans, senior management for medium loans and the board of directors for relatively large loans. The management considered that teamwork is attained through depending on committees.

The senior management was made up of few people. They included the Chairman, the GM, the Deputy GM and the Assistant GMs. They had third party mediated access to computing facilities that could provide them with only limited details. However, they lacked the availability of a DSS or a complete MIS. In general, the senior managers were not themselves users of computers except for one assistant GM. A senior manager explained his view by stating that:

'The true MIS gives information from banking transactions of the head office and branches but presently we benefit from what we have as an accounting information system. Our decision to automate was based on two equally important reasons. Firstly, the need for better control and secondly, our dire need to efficiently provide customer services amidst the tough competition we face'

Functional:

Beta management and employees were all aware of the limitations of the different systems in use. They realised that what they had was not sufficient to do an excellent job but rather an acceptable system for carrying out the work at hand. That explains why the bank saw no objection to continuing the use of English as the interfacing language for operating some of those systems. The general strategy was to use whatever was there until the new IS arrives. This, for example, included the very old system in the dealing room. A branch manager explained:

‘The system we have now fulfils the needs of customers. We have all accounts belonging to the same customer under one number. We have better serving time but there is room for improvement. There are things that require more time to be completed’

The IS is used to do the basic banking operations. Beta did not have a teller system. Therefore, the cashing and depositing transactions were carried out, mostly manually, on the counter. The customers would simply fill a withdrawal or deposit slip. The clerk had to check the balance to see if money was available when cashing or just confirm customer details and the data on the slip when depositing. In general, this was the case for the retail banking operations that cover deposits (time deposits, checking accounts, saving accounts and call accounts), overdraft facilities, individual credit facilities, advances and remittances. Branches needed to actually contact the customer’s branch by telephone and fax in order to authorise the withdrawal of cash at another branch. On average this would take half an hour. Although the system was incomplete, the system was still considered to save time that could be spared to carry out other tasks.

Corporate banking was not directly supported by the system. This covered a limited interrogatory type support for trade finance (letters of credits, letters of guarantees, international trade finance agreements, bridge financing and pre-export financing), commercial lending (small business financing, discounting bills, overdraft facilities and short term loans), and corporate lending (project financing, long term loans, bridge financing, leasing and restructuring and

refinancing). Beta had a treasury and investments department who were running their own system but the facilities offered for foreign exchange and margin trading as well as portfolio management, mutual funds and other trading possibilities were not advanced.

In addition, the bank offered some electronic cards namely American Express, National Express, MasterCard and Beta's own credit and deposit cards. The processing of transactions related to the use of those cards involved a lot of manual work. However, the bank could not offer ATM cards because it was not technically possible.

Beta seemed to have a problem of overemployment. The management saw that the IS would be a useful tool to help control the number of employees and monitor their productivity. The IS was also considered to help by varying jobs and skilling employees. A senior manager said:

'...for instance, in one branch, the number of employees has gone down from 7 to 3 and we can monitor the productivity of the employees to assess if we need more people on the counter so we can reshuffle. The system plays a great role in this as we still have structural problems. A person who had spent all his years working in deposits and was trained to do one thing because he was mostly needed there loses the opportunity to move up the ladder which is also not fair'

Similarly, The finance department reported that a year after they had started using their system they number of employees had gone down from 20 to 14. Employees in departments like finance were still spending most of their working time calculating and verifying details. Full automation is expected to change the hierarchical structure of that department for example.

The reporting is also done separately in departments and branches. Branches send daily and monthly reports to the head office. If reports were not produced for one day on the same day it would cause a big problem because the system will already include the next day transactions. Therefore, some employees in branches had to stay late to make sure this operation is fully completed. Even the

slightest mistakes involved a lot of efforts to rectify. The finance department handled the consolidation of figures and the production of reports required by the CBJ. They also prepare the head office budgets and the general income and expenditure, as well as analysing the cost centres and producing reports on expenditure of branches against budgeted expenses. The head office is treated according to its departments. Each department is a cost centre while branches are profit centres. Based on the number of employees and their salaries, each branch bears part of the total expenses of cost centres.

The management could not get much help to do forecasting due to system limitations. For instance, the monthly statistics were inaccurate and mostly manual. Many users considered that the bulk of their work had to be done manually but appreciated whatever assistance they could get from the system. Some departments, like the credits for example, did not have a banking system as such but rather a limited system of their own for storing data, doing sensitive analysis, looking at operating cash flow and obtaining needed reports for decision making. They depended on existing banking systems for customer details by means of a monthly report. In addition to a special mini-package that was rather primitive, the credit department's work depended on the Excel software package. It is mostly used for credit facilities of up to 2000 JD. The efficiency of the available system was rated 20 % by one of its managers. The manual tradition is still prevalent and to complete one deal it could take as many as '22 signatures' according to one manager.

The system in itself did not distinguish employees based on their skill because it was limited in what it could offer. The nature of the work was not affected by the system, neither was the centralisation or decentralisation of decision making. The strategy was to centralise but because the system was off line and not inter-branch, certain decentralisation was mandated by logistic needs. The control has become slightly quicker. As for the change to productivity or management, there was no noticeable difference. It was a matter of time before the system was institutionalised so that the employees and the management became used to it.

The IS has improved the speed of carrying out transactions. This was essential for keeping customers who might have otherwise liked to find a better alternative that could provide the speed of service. This similarly applies to the accuracy of information provided which has become easier to obtain and keep for a longer period. The paper work was not reduced and this was understandable considering that the available systems were semi-automated.

Estimating how much present systems boost profitability was very difficult. This explains why the focus was on the intangible benefits. However, the full automation is expected to reduce the probability of errors, thereby increasing profitability by not having factors that directly reduce it. This works exactly as the reverse to the concept of the opportunity loss. Furthermore, even the existing system, which is semi-automated, did help in introducing an authorisation system in branches.

Individual

Impacts of IS on individuals in Beta are discussed for three different types namely customer, employee and stakeholder.

Customer:

For a traditional bank, Beta has some of its traditional customers and new ones encouraged by the incentive of the prize draw or having close contact with one of the relatively large number of employees. A senior manager estimated the number of customers at over 350,000 and explained how the number had increased by over 100 % in three years. This came as a direct result of opening new branches in the Palestinian National Authority Area.

The general view is that the IS guarantees a justified and fair treatment to customers in terms of calculating the right interest. This is a shared view between the bank and the customers. The customer satisfaction is based on the service received. For example, how is the cashier treatment, the right interest and tolerance in cashing from reserved deposits. In addition, other customers want to have confidence when opening a Letter of Credit. Beta's old-fashioned customers

who were used to the slip for cashing money will always want to collect that slip even though the automation is making this unnecessary.

Beta customers were not concerned that they were not offered ATM cards. It meant more to them that the bank has friendly employees, facilities to obtain statements when requested and easy issuing of foreign cheques with the minimum charge. There are other customers who were more concerned with having higher interest rates on their deposits and getting credit easily when they need it.

Employee:

Beta had a large number of employees but as one senior management put it:

‘in accordance with the Jordanian national culture and respective work traditions, you find professionalism in one or two persons but not the whole organisation and therefore professionalism is not a dependable factor’

In general, there was a slight boost to the job satisfaction of employees due to the ease of use and the relatively increased speed of carrying out tasks. The work details have become clearer and in certain departments it has engendered more creativity and innovativeness. In proportion, the employee has seen an increased monitoring and control, which is of the utmost importance to the management because it helps fulfil the business objectives. This is expected to be felt more with the new system which is planned to have tighter control of operations and places more emphasis on what work is actually done by each of the employees.

Shareholder:

The shareholders are represented by their votes that secure the election of a director on the board. In their capacity as members of the board they get involved in decisions related to strategic issues. One of the directors expressed how the board was involved in deciding IS plans by stating:

‘The board of directors has formed an executive committee for the new system and they took charge of preparing specifications and requested offers from vendors. We (Directors) were split on the border for what we thought was best to do. We have finally agreed on a choice but most importantly, we wanted a strategic system to provide

up-to-date information and also control the work in the head office and branches to avoid mis-handling and mis-management'

The board realised the need to change the old image, created prior to 1987, and establish a new corporate identity which is not an easy task. This requires that management talk one language. The shareholders would like that to be done as soon as possible because it will ultimately mean a more profitable organisation that can distribute high dividends.

7.3.2.2 Determinants of Impacts of IS

The impacts of the use of IS were discussed in the previous sub-section. This subsection presents Beta's specific factors and considerations that might have played a role in the realisation of those impacts.

Technical

This is quite an obvious determinant of impacts in Beta considering the multitude of systems that departments and branches run independently. The management is taking no risk and on the vital issue of interest calculation, Beta has a problem of, for example, the discrepancy between computer calculated interest that accounts for any off day while it was wrongly done manually. One senior manager estimated that the difference in interest calculation could increase Beta's annual earnings by as much as 500,000 JD. In addition, the back up of banking operations in branches is sent to the head office on a daily basis and branches keep data for the previous six months.

The IS work involved approximately 35 employees and there was no one IS department set-up. The system analysts and programmers could not cope with the plethora of reported problems and requested modifications. Branches reported problems with the existing system on a daily basis. Some estimated the frequency of modification at 10 times a month. This frustrated branch employees who needed the changes and considered that their request should have been given a priority. On the other hand, the technical staff consider that the requests are excessive and even with issues like working out interest for foreign currency

deposits, there are no standards or common working concepts between the different branches and the head office.

It was a major headache for the support people because if any change was made then it had to be changed in all those systems operating in departments and Beta's many branches. One operational manager in a branch expressed his frustration by saying:

'When asked for my opinion about the system I told them it was no good for the bank but nobody seemed to listen. I have experience with a different system which I preferred as I was used to it. Branches have no say in what system to use or the decision taken related to that matter. As users we are not satisfied with the existing system. For example, notifications on the renewal of deposits took 9 months to do. We have hardware and software problems'

Beta lacks documented details about the operations of the system. This could be due to the ease of use of the system. Branches had to call in the technical support staff to report or enquire. In addition, there has been no evaluation of those existing systems. Beta has undertaken the task of finding out what hardware they had in preparation for the new system. A view of a manager in one of the branches explains some related issues:

'There is no evaluation for the system. The head office requires that we inform them about problems so they can request that they are rectified. The users are not asked what they want from the system. The employees are not convinced or satisfied with the present system, only 20 % satisfaction may be since it helps manage some work that they would need to do manually if the system was not there. I was never asked to suggest how to improve the work of the system'

Organisational

There was a mis-communication that caused a lot of waste. What two operational managers agreed upon evidenced this. One of those managers summarised this as follows:

'If a problem is found in a branch and rectified it does not get passed on to other branches so we learn from our mistakes. In fact, a similar problem occurring in another branch will get the solution from scratch as if it is separate and for another bank. There is cover up of mistakes committed. It is frustrating to follow up such matters and wastes a lot

of our valuable time which could be spent doing extra work earning more returns'

The organisational regulations are still not clearly defined. This explains why the person rather than the organisation becomes the focus of the power point. This could be said for other organisations like Gamma for example. Following the merger, the problem of personal differences amongst managers is transpiring and becoming clearly noticeable by their customers.

As the 'bank of the people', Beta strategy is still based on expanding in order to reach all potential customers but some managers do not think this is right for the future. They believe that the focus should change to be more on profitable sectors and opportunities rather than the current broad base focus.

Beta has started to put more emphasis on training which was completely ignored in the past. However, they have always considered that the system was easy to use and therefore thought that there was no need for additional training on the system. The planning now is focused on the future prospects since they have started implementing the new system. The management realised the importance of training in solidifying the corporate culture. In addition, there was a real need to train some employees who spent most of their working life doing the same monotonous work and were never tried in other departments due to the philosophy of specialisation.

Environmental

The CBJ is continuously exerting pressure for automation. This is even more emphasised for non-Jordanian branches. In addition, the CBJ was not consistent because for example at one time it wrote to banks to encourage merging with incentives as appetisers but the latest memo to Beta said that the incentives are not offered now. A similar thing can be said about the foreign currency transfer restrictions that have recently changed. The CBJ did not allow Beta to expand further in the Palestinian Authority Area and this makes long term strategic planning extremely difficult. It is also true that the CBJ mandates keeping a

certain percentage of the total banks' reserves in the CBJ without paying interest to depositing banks. On the other hand, the CBJ can re-use those amounts and make money on them.

The Tax department causes further problems to banks. They take the liberty to reject estimates of income as filed and do their own estimation work which is not fair in the majority of cases and is subjective. In addition, the levies for computer equipment are high although computers are supposed to be exempted from primary tax duties.

Another point related to technical determinants is the high prices of the communication infrastructure on the Jordanian IS/IT market. In addition, telephone lines are still a major cause of technical problems which is a determining factor that affects banks, especially those with a large number of branches.

Like the case of Alpha, Beta was facing similar competition because of the resemblance in the market conditions. This also applies to the situation of the instability of the Jordanian economy amidst a turbulent Middle Eastern region.

7.3.3 Context and Process

Contrary to the stereotypical thinking amongst senior managers, Beta did not show clear signs or traits of a corporate culture. This can be understood in the light of historical events. Ever since Beta was founded in 1960, the bank was run in a traditional way. The old report was that the top management was not active and the bank was not presentable to customers as cosy and habitable to employees. The working conditions were generally below standard.

The year 1987 witnessed a change of management or as a senior manager explained 'a change from management on paper to a management working methodically'. An expansionist strategy was pursued with the aim of achieving high growth. This has extended to the Palestinian National Authority Area where

they presently have five popular branches. It is also realised by the management that the opportunity to expand was seized when permitted by the CBJ. However, the problem lay in the fact that Beta did not have the right qualified people to take proper care of that marvellous chance. Since then, the bank had four different GMs but the same Chairman. The post-1987 management had the hard job of repaying debts, modernising branches as well as establishing a management discourse and corporate image. The way a senior manager sees the future was explained in the following quote:

'After raising the capital, as was directed by the CBJ, and completing the automation, I see no reason why we can not be the second bank in Jordan (The Arab bank is accepted by all bankers as having the rank of number one). We shall be leaders in technology and market with better profitability. We also have the best qualified management and our dealing room has a relatively sound reputation and we have a training department which did not exist before 1987'

On the other hand, the BFCS saw increased competition since 1987 and the whole economy was plagued with financial problems that, in part, were linked to the turbulent circumstances accompanying the Gulf Crisis which had started in 1991. In addition, there was a considerable increase in the total number of banks operating in Jordan. The technology was available in the market so that Beta had no problem in that direction. However, they had to resort to a non-Jordanian company for the software system. Although there were Jordanian software houses, none of them were comparable to the international standards. Those software companies were small and did not have the research and development allocation to focus on producing a fine banking system. The general tendency for Jordanian banks is to resort to a credible foreign system and this explains why a few Jordanian banks have chosen the Irish 'Kindle' system. Beta's choice of the Lebanese tailor made system was for a number of reasons. These included price as the main consideration, the previous experience of the vendor in producing and marketing similar systems, the time to have the system up and running and the commitment to have the vendor in charge of implementing the system. Table 7.5 covers some of the elements of the social context in Beta.

Table 7.5: Some Elements of the Social Context (Beta)

<p style="text-align: center;"><u>Historical Context</u></p> <ul style="list-style-type: none">• The bank was founded in 1960 as the third Jordanian bank and the sixth amongst all operating banks in the Kingdom• BETA entertained a traditional management who managed the work of a classic bank but were no proactive thinkers. There was a change of management in 1987 and the bank had four different GMs until now• Chairman and Sons filled key management positions and one of the sons is tipped to be the GM in the not too distant future• The decline of economic conditions in Jordan and the increase of competition made things tougher for BETA• The bank expanded in terms of number of branches and number of employees <p style="text-align: center;"><u>Social Relations</u></p> <ul style="list-style-type: none">• The post-1987 management tried to manage by a tightly controlled hierarchical structure and dependence on senior qualified staff• Management was less formal but could not have full direct access to employees due to the size. They depended on middle and operational managers to maintain touch• The computer staff were disorganised and worked without harmony. Job descriptions and reporting had been made clearer only recently. There was an arrangement for the computer work which involved sections and departments• Personal connection played an important role in developing new features to existing applications <p style="text-align: center;"><u>Infrastructure</u></p> <ul style="list-style-type: none">• BETA was used to using many different system for managing their daily banking operations. This has made management and staff long to have an on-line and inter-branch system for all departments and branches• Continuous instability and disruption to the work of technical development and support related to the hardware and software systems• Employees were mostly traditional and some had been with BETA most of their working life• Poor management co-ordination and lack of appreciation to the non-technical capabilities of technical staff

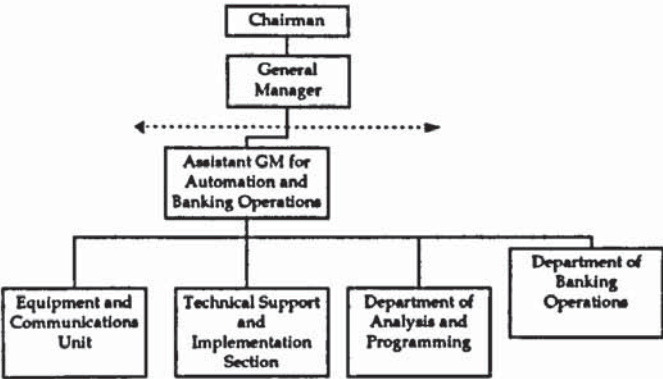
7.3.3.1 Cultural and Political Perspectives

The post-1987 management had a vision for change but it has already taken a long time to bring about this change as originally envisioned. This was led by the chairman who was probably not in a position to implement his plans due to lack of qualified and dependable people. However, he tried to do it by employing new managers and senior managers who had vast experience with other Jordanian and international financial institution. In addition, the fact that his family became involved was a plus point. He needed to have a technical overall control of all details related to the work which he was not able to do in person.

The fair management respected their commitments to the society at large by keeping their old staff although specialised in carrying out certain kind of work. Even those who showed resistance to change were not fired. The problem was not with improving relations between the management and the employees but more serious. The employees lacked professionalism and were not trained in modern banking and customer centred working strategies.

As mentioned earlier, Beta lacked a full plan for nurturing home-grown corporate culture. This could, amongst a number of reasons, be attributed to the lack of proper training ever since the establishment of Beta. It was mostly on-the-job and was not sophisticated. This attitude was a result of old marketing techniques that advised making the product and selling it rather than working out what the customer wanted as is the concern with modern marketing techniques. As a result, one notices a number of sub-cultures that make managing the bank more difficult.

Figure 7.4: Beta's IS Management



The senior management got on okay with the hand-picked middle managers. The basic philosophy was to have a GM reporting to the Chairman. The GM would have a deputy to assist him with his duties and would be responsible for foreign branches. There was a key position for an executive assistant GM who was practically overseeing the work of the different departments and involved in all aspects of Beta affairs. In addition, there was another assistant manager position

that was occupied by somebody who was appointed to this executive position because he was senior in a number of previous posts. The assistant GM for automation and banking operations was in charge of the work of the IS department as illustrated in figure 7.4. The other senior posts were the executive manager who had vast experience but had been with Beta for a long time, and the manager of the department of finance who was the son-in-law of the chairman.

It has to be said here that the better employees in Beta were either employed in the epoch of the new management or in the minority of cases were some undiscovered talents that had always existed but were never tested due to the old strategy of job specialisation. The staff came from all backgrounds but in general those old employees were not qualified to university level but rather trained on the job to become bankers. This is an issue that the management is aware of and plans to change with training.

The technical staff did not work in harmony. A junior technical manager explained the latest developments by stating:

'We have many problems at the end of the year and may be due to administrative reasons. Problems are noted and reported to the Analysis department. The new regulations entail that I need approval for any change and I have to go through the executive manager (Not shown in figure 7.4 because he does not work for the assistant GM for automation and banking operations). We have a problem of communication because the modifications are not tightly checked. With the change to the new hierarchical system we have overcome some support problems and the analysis and programming department works according to what is requested of them from a higher manager. Only now, modifications have to first be checked by an auditing committee. This is done prior to any implementation. The modifications are done in the analysis department and once approved they become the responsibility of the implementation and support section'

There was a power struggle within the IS-involved department, unit and section. This was obviously noticeable when it came to introducing new modifications. An employee expressed the view that:

'We have frustrating working circumstances and no powerful person in charge to convey the message to the senior management. There is a

lot of hassling going on and I do not feel that the technical people are fairly treated’.

This has resulted in reducing the job satisfaction for the technical staff. An employee expressed this as:

‘Some people claim that the system can not cope with the work of the bank. We needed the minimum number of people to install and implement while other banks had a full team to do the same job. It is a state of depression and the promotion is not systematic giving equal opportunities’.

A summary of the cultural and political perspectives on the process of organisational change in Beta is provided in table 7.6.

Table 7.6: Cultural and Political Perspectives of Change (Beta)

<p style="text-align: center;"><u>Cultural Perspective</u></p> <ul style="list-style-type: none">• The post-1987 management had a vision for change and a number of strategic objectives that were not laid out properly. Establishing a corporate culture was an aspiration rather than a short-term objective• BETA management was keen to demonstrate their social commitment• Decision making was considered as a senior management role and employees had to endure that due to lack of alternatives• Employees were more concerned with carrying out their daily tasks rather than worrying about fulfilling strategic objectives• The relatively large number of employees made it difficult for the senior Management to maintain general informal contacts with employees• Disagreements on how to run the work of technical support led to wasting time which could otherwise have been allocated to improving the system <p style="text-align: center;"><u>Political Perspective</u></p> <ul style="list-style-type: none">• Corporate power lay with the Chairman, the GM and the Executive Assistant GM. Other managers had limited authority delegated to them and therefore had power in the capacities of their positions• BETA employees exhibited high tolerance to decisions they did not agree with but had to accept because they came from the top• The general authorisation system was not enforced through the use of the system• The senior management directed orders to technical staff and expected them to obey those orders. The technical employees considered they lacked a strong representative to convey their opinions to the management• Employees had no incentives to excel and their lack of power made things worse.

7.3.3.2 Structural Analysis of the Linkage between Context and Process

The old management was running Beta as a classic conservative bank with an economic advantage because it was one of the first banks in Jordan. At the beginning, the work was manual and continued like that for a long time. Beta started automation with the use of calculators. This has influenced the management to the extent that any following improvement to automation was perceived as a better calculating machine. At that time, the word processing work was done separately by using old typewriters that were manual then electric. This carried on and the old management did not have long-term strategic planning to introduce computerisation except for certain machines that assisted the accounting and recording of banking transactions. At one time prior to 1987, Beta acquired some old systems that were of limited use in the head office. The number of branches then was 27. The decision making was to a large extent centralised and the senior management did not need to explain the significance to the employees. So one would assume that the management enforced the structure of domination in deciding to automate the way they thought was needed to go about doing their work.

The previous stage resulted in a number of working systems that were used in the head office and Beta's main branches. These included a system acquired as part of the deal involving the only branch of Chase Manhattan bank. With this addition, the bank had to manage the operation of one extra system. The management needed to legitimise it and shows the significance of its use to the old employees who had been used to the specialisation of doing one job manually for a long time. This could be done by means of explaining that the bank is not any less than the competitors who were into the business of automation and also by communicating their usefulness and contribution to profitability. However, the actual problem was how to make proper use of such resources. The other important point was how to prioritise the monitoring and control of those calculating and recording systems in order to maintain their conservative policies.

A similar set up continued with the new management after 1987. In the mean time, the bank purchased a number of different PCs for the head office and branches. At a later time, these systems made up the local LANs in branches and head office departments. The existing problem was the banking software. What was used previously were mostly packages and Beta had an arrangement with a consultant who still has maintenance contracts with some of the branches and departments.

A new company was formed to take care of the technical needs of the bank. In the early 1990s, the bank made a deal with another bank to purchase the kernel of their banking system. It was planned to do the tailoring in-house. The management envisaged that the ideal case would be to have the system in all the branches. Running an on-line and inter-branch holistic system was not considered a possibility due to technical limitations. In the mean time, Beta continued to expand and managing the computers in the branches became a serious problem. The technical company was at one time managed by the present GM and during that time some improvement was achieved. In summary, the situation was chaotic and the organisation of the IS-related work was in disarray.

The procedure for contacting the technical company was disorganised. Branches would ask for modifications to their system. This would be seen to be based on establishing the right contact with the technical head in charge of programming. Beta's employees interfered even in source codes of programmes and the programmer who was assigned to modifying the banking software. This has necessarily affected whether they accepted or rejected the software modification. Therefore, the structures of legitimation and domination were continuously being created and re-created. Power politics was the norm and programmers were worried about their jobs. Technical staff demanded that the management listens before blaming them. The technical company saw some very professional and capable staff resigning because of the messy situation.

Table 7.7: Accounts of the Context and Process Linkage (Beta)

- Old management carried out all decision making related to any use of the corporate resources. This involved enforcing the structure of domination
- The mentality of the calculating machines has affected the thinking of the old management. They did not realise the significance of preparing ahead by having a better and more robust systems
- The management did the internal marketing by communicating the significant of the use and the legitimacy of comparing BETA with its competitors
- Senior management had the advantage of deciding the choice of system thereby enforcing domination through control of facilities
- Branch managers and technical staff communicated directly. The legitimacy and power came from connections that interfered with the priority of work in the technical department
- At one time, there was a gap of control as the top management did not enforce the structure of domination to subdue the technical management. This translated into a managerial attitude that the technical staff should only obey orders
- The technical staff did not find it easy to draw on their interpretive schemes to communicate the use, limits and capabilities of the system. The users wanted features that for a number of reasons, technical and otherwise, could not be introduced
- New arrangements were imposed without question but the structure reflected what the technical staff were calling for. This was prior to the start of phasing in the new system which began early 1999

The technical management wanted personal credit while the senior management wanted employees who would put Beta as their top priority based on legitimate reasons. However, it was not entirely possible to draw on facilities and enforce the structure of domination. The situation has started to change during 1997. The management decided to restructure and introduced a change as appeared in figure 7.4. This came as the CBJ continued the pressure on banks to fully automate their banking operations.

Table 7.7 outlines the main elements of the structurational analysis of the linkage between the context and process of organisational change due to the use of IS in Beta. This analysis complements the previous coverage of the case which included discussing impacts and determinants, as well as the context and process of organisational change.

7.3.4 Concluding Remarks on the Beta Case

Since the research is concerned with investigating the phenomenon of the use of corporate ISs in banks, this section will pay particular attention to the relevant issues of strategy, design and development, implementation and evaluation within the context of Beta.

The historical context of Beta demonstrated the lack of appropriate strategic planning that would prepare the bank for potential expansion. This was the trend of the time besides being cultural because the general attitude was to be reactive rather than proactive. The IS strategy, if one assumes there was one as some relevant decisions had to be taken, therefore was to improve the calculating capabilities and leave more advanced work until later. There was no clear vision or a long-term view.

The present company profile presented Beta as 'one of the leading and most competitive financial institutions in the country', in addition to other marketing descriptions that explain the qualities that set Beta apart from its competitors. These included the breadth and diversity of resources, expertise on both a product and industry basis and access to quality customers. In actual fact, the construct of 'strategy' in Beta appeared to be a general framework that lay in the mind of senior management and was translated through budgeting work and balancing budgets. Therefore, the IS was not used for planning per se because the strategy was contingent on accommodating unpredicted contextual changes. It was more of a control tool that could not readily provide accurate information for facilitating sophisticated decision making or forecasting but rather helped in financial budgeting. In addition, it assisted in providing better services and enforcing control over branches.

Similarly, there was no plan for the design and development of the system. Around six years ago, Beta acquired a banking system that the management considered could be installed in all branches. The technical set up was expected to carry out any modifications and provide the technical support. This has proven complicated because of the lack of plan. The alterations to the existing system were case-specific and for a long time were not introduced to the systems in other branches. There was no uniform and systematic approach for introducing changes to the banking system and one can safely say that the different installations of the same system were not identical, Beta had five foreign branches that were operating on-line and inter-branch. To make things worse, the

software modifications were not tested. This has changed recently and such modification had to undergo testing by the auditing department (at least by one auditor and one clerk from the banking operations department). The implementation of the system, even after almost six years, was still not completed. This meant that not all branches had the same working system. Considering that Beta had a relatively large number of branches, any amendment introduced to the banking software had to be made to all systems in the different branches.

It was very difficult, with working conditions as discussed above, to make a proper evaluation of the system. All Beta employees that were interviewed for this research agreed that the system was not doing a good job. The general attitude was that the temporary use was going to end upon the introduction of the new system. Somehow, it was perceived that the new system will do everything they had imagined as soon as it is introduced. The phasing in started in early 1999 and at this rate it will take a long time to have a fully working system that conforms to the required specifications. The evaluation was more concerned with having running systems but Beta did not seem to have ever solicited the opinion of users. It could be due to the abundance of complaints that were reported.

7.4 Gamma

This section presents the third organography which is given the pseudonym Gamma. Details related to the number of employees interviewed and their types were shown in table 7.1.

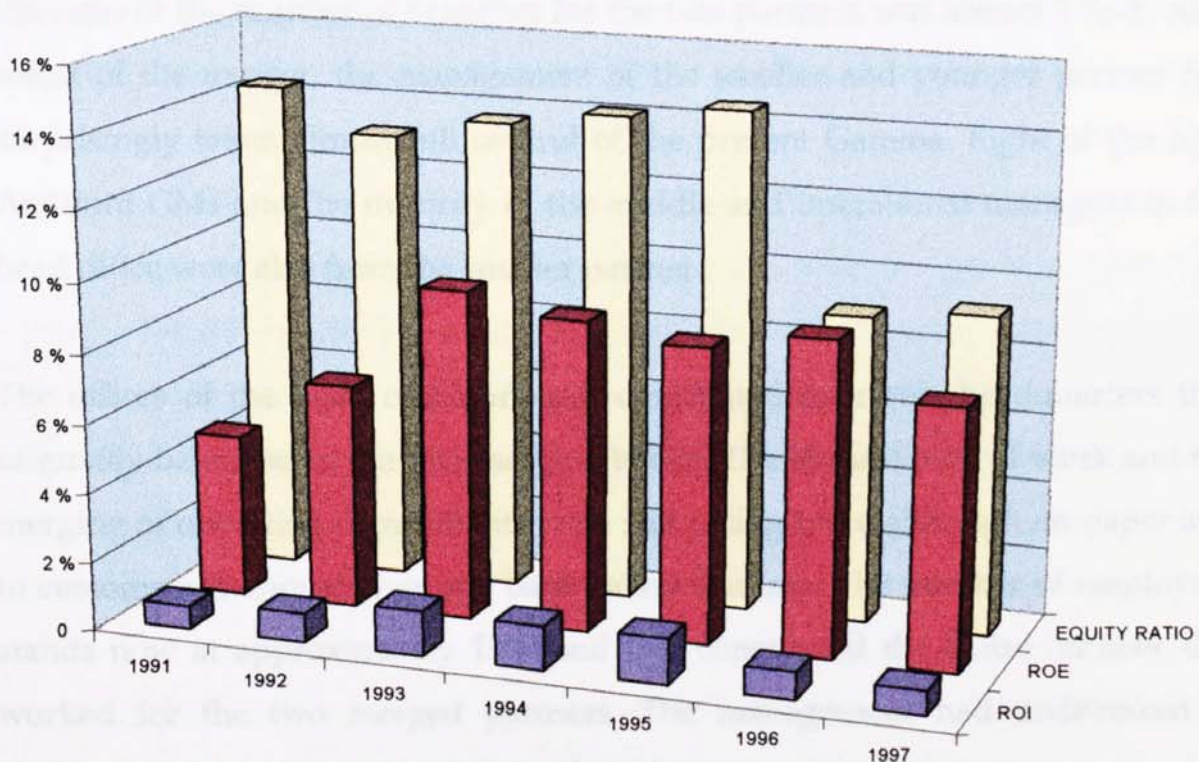
7.4.1 Case Overview and History

The bank was established in 1955 and is entering its fifth decade as one of Jordan's pioneering banks. Gamma has officially announced a merger with another Jordanian bank during January 1997 (the other bank had been established in 1981 and was relatively small in terms of its total assets of 165 Million JD). The joint operations of the merging banks had started on the first of

December 1996. The decision to merge came as a result of the realisation by the two boards of directors of the two banks of the importance of this step. Their ambition was to create a large bank that can effectively deal with the impact of banking developments in Jordan and in the region. Gamma is the third largest Jordanian bank in terms of capital which amounts to 42 Million JD and a shareholder equity of approximately 68 Million JD. The total assets amounted to over 630 Million JD.

Gamma has a head office in Amman and operates 54 branches and offices in Jordan, four branches in Lebanon, five branches in the Palestinian National Authority Area and one offshore banking unit in Limassol-Cyprus. Gamma is planning to open seven new branches and offices in Jordan and two branches in the Palestinian self-rule area.

Figure 7.5: Economic Performance Indicators¹ for Gamma



The bank operates as a comprehensive banking organisation. The activities encompass commercial, corporate and retail banking services as well as private and investment banking operations. As a prominent bank, the focus goes beyond

¹ Figures for Gamma were those for the original Gamma up to 1996 (the end of the financial year for 1996 was considered 30/11/1996 due to merging procedures). The 1997 figures were for the merged organisation and the year was considered to cover the period 1/12/1996 - 31/12/1997.

maintaining a market presence but extends to being able to modernise and offer new services which brings added value to customers. Figure 7.5 shows some of the economic performance indicators for the years 1991-1997.

Their vision was centred on the use of the corporate information system. It was summarised in the annual report issued in April 1997 as follows:

'It (Gamma) plans to extend on-line inter-branch communications throughout the branch network in the Kingdom, as well as allowing customers to be in touch with their accounts via ATM, or by home computer. Gamma intends to use technology to reduce work errors, time and paper load from our processes, thereby becoming more focused on, and responsive to our customers'

One side of the merger has been known as a traditional bank with conservative policies while the other was reputed as a professional and specialised bank that was focused on working with business customers. The older partner had been in the business for much longer but the younger one was more modern. However, the ratio of the number of branches for the two partners was almost 1 to 3. As a result of the merger, the management of the smaller and younger partner has surprisingly taken almost full control of the present Gamma. Eight of the nine Assistant GMs and the majority of the middle and operational managers in the head office were also from the smaller partner.

The offices of the head office are still distributed over two headquarters that originally belonged to the two merging banks. The streamlining of work and the merging of operating departments were still taking place although on paper and to customers it appeared as one bank called Gamma. The number of employees stands now at approximately 1300 and that constituted the entire number that worked for the two merged partners. The management had undertaken to observe a policy of accommodating all workers.

7.4.2 Content

To shed light on the computing environment in Gamma, one has to look at the technical capabilities of the two merging partners first. They had their different

set-ups installed in the head offices and branches. The arrangement remained like that after the merger and the plan was to integrate the different systems as soon as possible. Therefore, it seems reasonable to consider the impacts as they were for the two partners before the merger and in the first year that followed. A future research opportunity arises due to the importance of pursuing the case following few years after the merger since it will be possible to compare the previous situation with that of the fully merged case. The partners are henceforth referred to as the *Classic* and the *Modern*.

The Configuration of the Systems Operating in Classic and Modern

In the case of Classic they had a Wang system in 1982 and IBM RISC machines in 1986. The Wang was used for the banking operations and had a partial system for health insurance and payroll. It remained in actual operation in the head office until 1995. Classic converted to using Motorola (6000) based RISC machines in 1993. There was also one old IBM system that is still in use for a number of applications. Classic used TCP/IP for the LAN communication and the X25 Packet Switching Protocol for the WAN (Wide Area Network).

As for the software in Classic, it was built within the INGRES environment and later changed to using ORACLE (version 7 on the Motorola based systems and versions 5 and 6 on the IBM based systems). The original system working on the Wang had been written in COBOL. It was a documentary system rather than a fully-fledged banking system so the automation was very primitive in terms of what is potentially possible these days. The documentary system involved two screens in each branch to enter and access records.

The actual automation in Classic started in 1995 following specialised studies that had laid out the required specification based on actual needs. They had initially attempted to build a comprehensive system with the help of a consultant. The designers were employed in the bank to do the job from scratch. They had anticipated that it would take 3 months to finish the whole system but 18 months later only one part was produced and tried in a branch without success. At a later

time they resorted to working with a local software house to produce a comprehensive system which became operational in most of the branches but they had problems with the hardware set-ups in almost half of their branches with obsolete hardware. Computerisation covered applications like Letters of Credit, Letters of Guarantee, bills, loans, credit facilities, customer services, deposits, currency transfer and accounting, and the system was capable of producing a wide variety of reports for decision making. In addition, Classic had their comprehensive system working in five branches that were based in the Palestinian self-rule area. The inter-branch networking was partially available and is still at the experimentation stage.

On the other hand, Modern had different system set-ups to those of Classic. Most of the servers' hardware were NCR and their branches operated as LANs. In general, the hardware was Intel/ Pentium based rather than RISC based as in the case of Classic. They operated a main system in the head office with terminals in branches that are linked by dial-up or leased lines (approximately 250 intelligent terminals between head office and branches). The communication between their LANs and WAN was based on TCP/IP.

Considering that Modern was a financial company that converted to a bank, they were in a position to have a relatively new system. The automation had started using a mainframe for managing a general ledger in 1982/1983 at the time when Modern was a financial company. Modern became a bank upon the procurement of the assets of another bank that went bankrupt at that same time.

The year 1990 witnessed the start of the real development of automatic banking systems in Jordan. Modern was one of the banks that embarked on a feasibility study to investigate the possibility of introducing an up-to-date system. After tendering the project they received a number of offers and some of them were foreign systems that gave very expensive offers. In addition, those systems were considered not suitable for tailoring to meet the needs of the bank and the CBJ

requirements. The management eventually decided to award the contract to a Lebanese software house through a local contractor.

The contracted Lebanese software house developed the banking system by 1993. The contract involved the supply of Modern with a fully tailor-made comprehensive system that was based on a UNIX platform. The deal involved having a resident consultant who would be in charge of the implementation and modifications. After 3 years, the implementation is not complete but the system was operational as an on-line and inter-branch system in the majority of their branches. Modern system was written in the INFORMIX database language. It was not a complete banking system but had the majority of the features. In addition, it was capable of producing all kinds of reports which made it an effective system for supporting decision making in Modern. They also offered the ATM facility to their customers.

Modern banking system offered Letters of Credit and Letters of Guarantee that were part of a major module related to accounting and teller module which covered cash, deposits, cheques and foreign exchange. In addition, they had loan facilities module, bills, loans and overdrafting module. Private banking was offered and considered as a separate branch on the system. This is a similar case to the finance department (with the treasury) which was treated as one branch on the system. Modern lacked centralised accounting for the head office and branches. The system allowed modifications and additions which were accordingly carried out by resident programmers. The specifications were designed as requested and the existing modules were extensively tested so they were commissioned and consequently implemented. Modern's system needed fine-tuning in order to make it more user friendly as users complained about certain things that needed to be improved.

Gamma offers ATM services and is preparing to offer Home Banking like the existing case in Modern. The first Point of Sale Transaction was executed in June 1995 and the subscription to SWIFT began in June 1994 (The first Jordanian

SWIFT transfer). In addition, they had no specialised system to assist decision-making but the management had to depend on the reports produced by those systems used.

Upon the decision to merge, the new senior management requested that all developments in Classic and Modern were halted until a decision was taken on the choice of system that was to be used in all branches and in the new head office. In the mean time, Gamma did not have a technical linkage between the systems but rather an *ad hoc* joint manual reporting. The merger had immediately effected the merging of the central operations as the first step and all retail operations are received and consolidated in the head office (off-line).

7.4.2.1 Impacts of IS

It is important to note that the impacts discussed here are as interpreted for the two merging partners. The actual merging of central accounting started on 1/12/1996. However, the technical details of the IS had not been finalised. Therefore, the reported impacts refer to those that have occurred as a result of using different distributed systems in Classic and Modern. This in itself is not different from the situation in Beta although it was one bank that operated using different systems for different branches and departments. The difference is discussed when presenting the cultural perspective as included in context and process sub-section 7.4.3.

Similar to the case of Alpha and Beta and in accordance with the analytical framework of the research, the impacts will be discussed under the two main headings of Organisational and Individual.

Organisational

Albeit the use of separate systems, some impacts have occurred as a result of the use of those ISs. These impacts will be discussed at the two organisational levels of strategic and functional.

Strategic:

According to a senior manager:

'In our bank there is a strategy but it needs to be clarified further as it is not as clear as it should be. Whether applicable to the general side of the business or the automation is another issue. After all, the automation fits with the business side. The more you automate the more you strive to cut cost and acquire benefits. Clear vision, well it is not 100 %'

Modern had a short term IS plan whereby they would work to arrive at a solution through a participative design of the banking system. It was envisaged that in case they decided to introduce changes it would be done in-house after having gained some experience with minimal cost. In reality, they assessed the outcome as better than what was initially expected because they ended up with a good system at a reasonable cost, but the system, by far, does not come any close to those systems originally offered by foreign vendors. The present strategy after the merger is to select the best system and carry on from there. In terms of the business strategy, for the long term the management are aware of the need to clearly identify where Gamma is heading. This also affects the investment in IS/IT to serve the bank by enabling and driving the business purpose. In the mean time, they did not have an IS budget but there was a rough estimate of how much money they would spend on hardware in a year.

Similarly, Classic had no long-term planning that covered the business and IS strategies. The management wanted to automate because it became important for a few reasons. In addition to the fierce competition, the CBJ demanded that all Jordanian banks should move to fully automating their banking operations. Therefore, Classic moved from the use of obsolete systems to adopting a solution with a potential for expanding to have a fully automated on-line and inter-branch system. A senior manager remarked:

'My basic logic informs me that although we are busy with the running of the day to day business someone should be sitting there, in a back office, analysing and planning ahead. Unless this happens, things will remain vague'

Gamma's senior management saw the overall benefit of the systems as in facilitating additional control measures and security. In addition, they helped in translating the strategy into actual plans. The plans were prepared by the senior management as top-down and generally executed through the distribution of internal memos and work directives to managers concerned. In summary, the practical expectations were centred on improving service time and quality of work in order to satisfy customers who nowadays have access to competitors who can offer such high-quality services. However, the direct contribution to the profitability came as a result of the accurate calculation of interest and commission.

The goal to scrutinise control seemed to have been achieved although the bank had more customers because of the expanded number of branches. This was managed with the additional centralisation of control. Branches had to refer to the head office for authorisation and could not take many decisions independently although they were considered profit centres that stood on their own for the purpose of working profit and loss. The centralisation of control is linked to the conservative policies of the management who would like to reduce the risk to the minimum.

Functional:

More work is being processed faster and more accurately. In a typical branch they could manage clearing on average 40 bills by 10 am and now they can do that simultaneously with a number of other jobs. The customer waiting time was certainly reduced and rather than having to manually calculate bills it was being done automatically.

As for employment, it was a management decision not to sack workers. However, on the business unit level (branch or department), the number of employees has gone down. Those members of staff were re-directed to work in another useful capacity where they would fill gaps that would have needed new employees to do the work as a result of the expansion of the bank and the

concomitant increase in work load. Some middle managers have approximated the overemployment figure to 20 % of the total number of employees whereby those extra employees could be made redundant without much effect on the running of the business.

Responsibilities have been delineated in greater detail. There was a noticeable difference in dealing with customers and this translated into better quality of service offered. As for the levels of work, they have been reduced because of the possibility of approving transactions within the system. The reduced levels were operational and not at the middle management level. An illustrative example is the case of cashing a cheque which normally needed verifying the signature and checking the account. This would be followed by an authorisation by an employee who signs at level B and then another at level A whereby the previous three stages are checked and approved. Now, the teller is not a specialised employee but accepts a cheque, verifies the signature, checks the account and approves the transaction in order to pay out cash to the customer.

Generally speaking, the on-the-job performance is believed to be better now and there has been an increase in productivity. However, the management noted that the performance of employees has improved. Gamma employees expressed the view that there was no reduction in the use of paper. The systems provided better reporting facilities about all aspects of the business. On the other hand, the internal communication became more difficult because in the majority of cases there was no need for personal contacts.

The IS has reduced the number of departments because of the large degree of transfer of the back office work to the front office. It has also become much easier for managers to get reports and this does not involve many people. Therefore, the work of a manager has become highly refined and of improved quality. This made it more associated with the much needed strategic thinking and the need to fulfil the planned aims and objectives.

Individual

Individuals in their different capacities are bound to be influenced by the use of information systems. The impacts can be investigated for different types of individual. Although the focus was on the organisational level, this part covers the impacts on three types of individual namely the customer, the employee and the shareholder. The intention is to see a more complete picture of the impact and in this case, how are those individuals affected by the organisational impacts resulting from the use of the information system.

Customer:

One of Gamma's Mottoes said 'wider customer base'. In general, the bank considers it better to depend on a wider customer base so as to avoid jeopardising the economic strength of the bank. In addition, Gamma has fully realised that the mentality and type of the customer have changed. They come in expecting a quality service and if they do not get that then they make sure they name a competitor who offers better service or express their view of who of the competitors was not in a position to offer the sought after quality service. Customers are not easy to please and expect the best treatment, the best interest and most importantly great respect if they are to remain loyal clients for as long as possible. Some of them expect a clear understanding through full explanation of dealings, besides the personal attention.

Gamma services have improved markedly due to the increase in the speed of service and the better quality of information as demonstrated with more accurate and better presented bank statements. However, customers valued personal contacts and some branch managers even emphasised their confidence that if they leave, out of choice or otherwise, then their loyal customers will follow suit!

Employee:

Some people argue for the de-skilling effect of information systems whereby they do not provoke the mental capabilities of the employee. A support for this position can be based on the change of emphasis of work as explained by one of the middle managers in Gamma:

'The emphasis was on the mathematical background of employees. This changed to an emphasis on logical problem solving. Most of the new employees do not need to know mathematics. Present employees do not bother to know much about what is involved in the processing of a transaction. This is better for the bank as employees have more time to do other jobs. I still assess my subordinates based on what they know about the banking operations. From my experience, an employee who has manual experience has better judgement as related to work. In the past, the school leaver could work as a banker but now it is impossible for such a person to get the same job'

The use of the systems has made the life of the employee easier and more comfortable because of the automation of some processes. They are no longer needed to stay late especially when producing the end of the month reports. It can also be considered as having reduced the job security because of the decrease in the margin of tolerance for mistakes committed and because the new working procedures are no longer complex requiring expertise. The reduction in the job security could be thought of as psychological because those employees who had the opportunity to work manually, considered it as an added security due to the acquired personal knowledge that the bank would not have if such employees departed, willingly or otherwise.

The system has improved the chances of promotion for employees because it elicits skills. The implementation of the system was so important to expose hidden talents in the branches. However, the job variation was different amongst employees and depended on the position. For example, one middle manager explained that the work has changed and was marked by an increase in the span of control. In addition, because of the facilities offered by the system, the manager could do the extra checking and authorisation but the system itself did most of the work.

On the hand, the systems in Gamma were under-utilised which could be due to a number of reasons. The reasons include lack of an external marketing and awareness campaign on the side of the vendor, the internal marketing of the systems by the management and other factors like the lack of technological knowledge, resulting in technophobe, on the side of the user. This may also

support the argument of the general failure of the top-down type of management to sell such a concept properly.

Shareholder:

The shareholders would like to have the most advanced systems that can secure their investment in Gamma. This naturally applies to shareholders in Alpha, Beta and Delta. The management realises this and reports the improvement in the technical capabilities in their annual report. Other than that, the systems have no reportable influence on the shareholders of the organisation.

7.4.2.2 Determinants of Impacts of IS

The previous sub-section presented the interpreted impacts of ISs in Gamma. The discussion is pursued further here by looking at the specific organisational factors and considerations which might have played a role in the realisation of those impacts in Gamma. The discussion is extended further in sub-section 7.4.3 when presenting the context and process of organisational change due to the use of information systems

Technical

The technical work related to the ISs in both Classic and Modern depended on a total of 22 employees. Those were capable and qualified people. Formerly, they were managing their work according to their own plans for completing implementations in branches. The situation has naturally changed following the merger. The technical staff are not yet located in one place and there was a lack of co-ordination amongst the different sections. The technical representation has been excluded from the committee that was supposed to decide which of the two banking systems was the most suitable for use in Gamma.

There were also problems with the banking systems in Classic and Modern. In Classic, a large number of branches needed a change of hardware in order to install the banking system. In Modern, few branches were awaiting the installation of the banking system but there were some existing bottlenecks that

needed rectification on regular basis. They had technical problems of all sorts. For example, the different Arabic standards used in Classic and Modern.

Technically, three different kinds of Gamma branches need to be handled. Some branches have no hardware configuration suitable for the installation of a modern banking system. A second kind is the one that runs an old system and the third is the kind that runs the ORACLE based system in case they decide to go with Modern's system, or INFORMIX based system if the management decides to go with Classic's system. This creates a big headache as a result of having non-coherent environments for the installation of the system. However, Gamma did not lack technical expertise for globalising the system of choice.

Organisational

The merger was a great challenge for the system management and the question of which system to use in the new bank was problematic. Since Gamma's top management came from the smaller and modern partner, there was a tendency to actually work on the system that they were used to and was working close to what they had envisaged. Another problem resulted from the need for the actual unification of the working procedures and the concomitant, but expected, problems related to mixing employees and establishing one corporate culture. It was still early for all those problems to be resolved.

In addition, there was the problem of having some employees who had no previous experience with computers and the accompanying working environments. This was especially apparent in branches, as it was difficult to get users to use the system properly. Having to convince the user of the best way to use the system was hard work. Those employees were not co-operative in making quick progress to getting used to new working conditions. However, Modern was in a better situation because the employees were better informed about systems.

The resistance to change by sticking to old ways of doing work was illustrated in the case of not wishing to use the Magnetic Ink Character Recognition machine. The employees preferred the manual work and the system was switched off. A user was quoted by a manager as saying 'Why should I show my boss that I have no work so I can find something to keep me busy'. Some of the facilities offered could make the life of users easier but the employees did not know them. They had not received a universal training on the system but rather specialised training in a specific area. The training was mostly on-the-job and usually assisted by a colleague.

One of the major problems that Gamma had to deal with following the merger was the exchange of some employees between Modern and Classic and vice versa. There was the primary problem of the need to adapt to Gamma's working procedures. In addition, there were the secondary problems, for example, due to the difference in the systems used and the way of handling employee records, the branch managers would agree to reverse transfers in case the employee had to pay a mortgage.

There was also the problem of technical management and the supervision of the work. The Computer manager explained the problematic situation as follows:

'My previous management at Classic was not involved but I used to demonstrate and they were very understanding. Now, I have to do the same thing to my new management but the problem is that we have actually four working groups. Firstly the Classic management, secondly the Modern management, thirdly the West Bank branches and fourthly the joint management of the system to be adopted following the merger. This is taking a long time and will probably last for one to two years. It also takes a lot of efforts and the management is suffering, they will continue to suffer'

Realising the influence of the bad situation as explained above, a manager pointed to the dire consequences and expressed the urgency of the need to do something about it by saying:

'We need an internal SWOT (Strengths, Weaknesses, Opportunities and Threats) analysis before we can do that with competitors. The weakest of our competitors is becoming stronger than us'

Environmental

Competitive conditions affect Gamma like all other Jordanian banks. Having a system to support their competitive efforts has become a necessity. In addition, the Jordanian macroeconomic situation does affect the work of banks as local organisations. This is coupled with tight controls by the CBJ which issues directives to control the monetary situation by closely monitoring the financial institutions such as Gamma. For example, the CBJ had written to the two partners that make up Gamma encouraging them to merge by promising incentives. Upon the change of the Governor of the CBJ, Gamma was informed that the incentives originally promised were no longer available.

7.4.3 Context and Process

Both Classic and Modern were not doing exceptionally well but rather about average in terms of their economic performance. They realised that the chance to achieve growth and sustain profitability was better boosted by joining their efforts together, especially in a slowing down economy. The working environment was becoming more competitive by the day. Some of the problems faced by Jordanian banks can be partly shown up when looking at the trading in the Amman Financial Market. The prices of shares for JFOs have continued to plummet and although it was mostly due to speculation because of a state of political instability, the ROI ratios for those organisations had also contributed to that. The return is not enticing for investors because, in the majority of cases, it would be less than the safest secured return of the minimum interest rate offered.

Classic was known to be a typical traditional and stable bank that was planning short-term. Classic did not have aggressive marketing policies. On the other hand, Modern had their system at a relatively early stage of their existence as a bank and could spare the time to do proper planning ahead. They had access to reports based on real data which included average balances of branches and head office and accordingly, they could forecast without many problems. However, Classic did not have consolidated data and therefore, even those reports

produced for the CBJ were inaccurate. In the case of Modern, the auditing department were already monitoring the work of the IS department.

Table 7.8: Some Elements of the Social Context (Gamma)

<p><u>Historical Context</u></p> <ul style="list-style-type: none"> • GAMMA became one operational entity by the end of 1996. The two constituting partners CLASSIC and MODERN had been founded in 1955 and 1981 respectively. • The management of the smaller partner took over and effected preferred changes to senior and middle management positions • GAMMA is presently managed by a modern management who is trying to establish a vision and strategy. The merging partners had originally different styles and outlooks of management • The decline of economic conditions in Jordan and the increase of competition were the main reasons behind the merger and continue to pressurise GAMMA for the need to improve working conditions in order to achieve objectives • The bank became the third largest in Jordan in terms of capital • GAMMA has over-employment and in general, the employees were uncertain about changes but rather satisfied <p style="text-align: center;"><u>Social Relations</u></p> <ul style="list-style-type: none"> • The management was familial and tried to be informal. This was difficult because of the size of GAMMA • Technical people were not popular and not consulted about systems affairs in any managerial capacity but only as technicians. They became alienated amongst a majority of bankers without technical background • GAMMA contained employees who were used to a traditional and modern managements. The employees of the old partner considered themselves as foreigners because their former management was not represented. By the same token, the employees of the smaller partner were behaving as victors <p style="text-align: center;"><u>Infrastructure</u></p> <ul style="list-style-type: none"> • Good quality of technical and clerical employees • The non-uniformity of systems' hardware and software • Lack of dependency on the technical staff • The increased volume of work as a result of the merger

There was an age difference between the former employees of both Classic and Modern. A subsequent effect was the difficulty of older employees to get used to automation. In addition, the two partners had different working procedures and the difference was clear when it came to the formalisation of internal contacts between the management and the rest of the employees. Table 7.8 summarises some of the elements of the social contexts as referred to in the presentation of the organography so far.

7.4.3.1 Cultural and Political Perspectives

There are two main clashing cultures and many sub-cultures. To understand the complexity of the present situation, one needs to know that the present senior management is actually that of the former smaller partner. The general attitude of the employees of Classic was rejectionist and that of Modern was of enthusiasm and acceptance. This was indicated by the demonstrated attitudes of the employees who had previously worked for the two constituent partners. To those who formerly worked for Classic, the management, as explained by an operational manager, comprised:

'A GM with 9 Ass. GMs...for the feedback it takes more time to go up and come down. The senior management sits on the top floor and hardly have informal contacts with employees or see the work directly'

This was exactly the opposite according to the employees who had formerly worked for Modern. A manager summarised the positive view by saying:

'We are used to our managers doing the secretarial work when they need to without the least embarrassment'

The management formed a committee to decide on the choice of system after the merger. This has failed due to personal prejudices of its members to the systems they had been used to. A second committee was formed later but this time it included only bankers and no technical staff. They were requested to write down specifications required to carry out the work of Gamma as best as could be managed. The second step was to compare the two systems of Classic and Modern according to the required specifications. A senior manager expressed his frustration as a result of being involved with the selection committee by saying:

'The problem is that people of those two merging banks are emotionally attached to their old system. If we have politics in the middle then it is a big problem. We have to go about this systematically. Some people try to interrupt and force a decision but it should not be like that because it has to be done scientifically and systematically... the thing is we would like the majority of the people to acknowledge that we were not biased (when taking the decision) but rather objective. People will always say after all that we have been biased. Time taken is more than what it should be. It just takes a long time'

In addition, there was a subcultural conflict between the technical people and the bankers. The IS people considered that they knew technical details and banking operations while bankers looked at the technical staff as having a superiority complex. The management of Gamma comprised only bankers and it was interpreted as a natural tendency that they sided with bankers when it came to, for example, forming the second committee for deciding which system was the most suitable. A senior manager remarked:

'They (technical staff) failed to relay messages and the bankers had to eventually lead the project. The technical people do not explain themselves properly to users. The user is afraid of listening to technical jargon because of the basic belief that the talk needed somebody with more sophisticated knowledge which ordinary users lacked. From experience, the user finds it easier to learn from a banker about the banking operations on the system'

In the same vein, the GM remarked that:

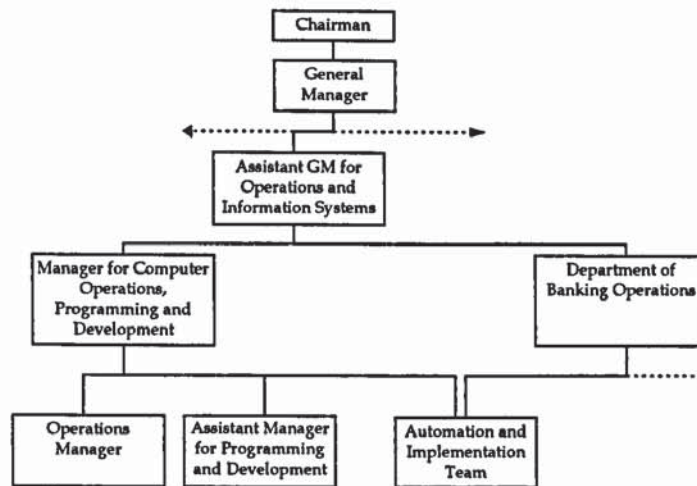
'Cultural factors are important when introducing or making changes to existing system of work. Technical people, like..., who had little experience in life think that the machine can do everything but he did not seem to appreciate the relevance of cultural factors when adopting and adapting a new banking system'

On the other hand, technical people saw things differently and one technical manager summarised his tribulations by saying:

'Team working is very submissive and more like an army. I no longer wish to waste my time in convincing and counselling. The clever thing would be to make proper use of the situation'

The problem for those technical employees was not really technical. Some suggested that Gamma should have an external consultant to decide on the work priorities and the system of authorisation. The issue that the technical management were displeased with the hierarchy, as shown in figure 7.6, was obvious. They could not speak to the GM or the Chairman directly which would have made the computer department more powerful, although they almost got this approved for a short while but it was changed soon after. In addition, they had joint control over the implementation team which has basically meant giving technical advice. This shows the continuing struggle for power.

Figure 7.6: Gamma's IS Management



There was also the subculture of users. Those employees were not actually involved in the design and development of the systems. In Modern, the feedback was passed to the senior management through middle managers based on a quick evaluation involving as few as two users in a particular department. There is more emphasis on training now but this was lacking before. Gamma runs a specialised training department that is expected to help instill an envisioned corporate culture. In general, employees did not have enough training on the capabilities of the system.

As is the case for other organisations in Jordan, there was political influence behind the selection of employees for occupying certain important positions. A minimum number of employees were protected because they were employed based on some connection who, as perceived by other employees, received the back up of the 'big shots' who were behind their employment. In those limited cases, it was a bad example that debilitated employees because they considered it as a typical inequality that they could not do much about. This is not foreign to the Jordanian culture which tolerates such unfair situations.

Some executives considered that the IS did not affect the organisational power structure. An appropriate example was that of a senior manager who was

managing a department that had 60 employees. As illustrated in the following quote, he had more worrying responsibilities without additional power:

‘I am more exposed now and under a lot of pressure because I have to take more risks as a result of the automation of the banking operations. The worrying issue was that any decision related to automation could put the bank in a lot of jeopardy. This is how I feel and not that I am one of the powerful decision making people in the organisation. I look at it as having to carry a lot of responsible jobs which do not make me sleep the night peacefully when thinking what could possibly go wrong while others work the normal hours without having to bother about such issues’

Table 7.9: Cultural and Political Perspectives of Change (Gamma)

<p><u>Cultural Perspective</u></p> <ul style="list-style-type: none"> • Lack of consolidated business and IS strategies • Two clashing cultures resulting from the merger of one traditional and one modern banks • A subcultural conflict between the technical people and the bankers • Users were receptive but the two culture clash engendered inconveniences in the processes of employee’s adaptability and system’s adoption • The increased number of employees made it impractical for GAMMA’s management to maintain informal contacts with employees <p style="text-align: center;"><u>Political Perspective</u></p> <ul style="list-style-type: none"> • Planned redistribution of employees to tighten management grip on the organisation • Limited favouritism of employees who were appointed due to social obligations rather than objective reasons • The senior management emphasised the centralisation of control and decentralisation of work • Open conflict between technical management and operations management and the bankers have prevailed thereby suppressing the technical staff

A middle manager expressed her view on the change to organisational power by saying:

‘Previously, it was the management at all times and the accounting department. The emphasis was on accounting who had direct touch with management. In the semi-automated stage the emphasis became on the programmers because they were rare in the area for in-house development. Now, the emphasis has changed to the financial analysis people. They don’t need many people to develop and judge relevance of system for analysis’

Table 7.9 presents the cultural and political perspectives of organisational change due to the use of their information systems.

7.4.3.2 Structural Analysis of the Linkage between Context and Process

The decision to merge two banks was fraught with problems and difficulties. To understand the situation, one needs to go back and look at the procurement of ISs in the merging banks. This was partly discussed in the previous sections and sub-sections of this organography.

Classic management was more traditional than that of Modern. The main decision on the investment was top-down and the technical manager was like a consultant. They saw the need to computerise and solicited the opinion of an outside consultant. The decision had adequate foundation for being legitimate because of the trend to observe competitors and see how to go one step ahead. The role of the internal technical people was to explain the significance of having a more advanced system but at that time, Classic did not have many of those people.

An internal problem was faced by virtue of having employees who were experts in carrying out traditional banking work but were not exposed to technological advances. This was not the case with all Jordanian banks because, in a few cases, some of their employees had already worked for a foreign bank outside Jordan. Those foreign banks in other Middle Eastern countries had long made strides in the direction of automating their banking operations. For Classic, the management needed to sell the concept internally and this had to be done based on the structure of signification.

Further steps for more automation were taken with urgency because of the increased local competition. The management resorted to a local software house for tailoring a system for their banking needs. In the mean time, they continued to use the available systems because of work dependency. The users so far had had little to do with the design and development of those systems. For the

management, who had an overall control of the resources including the employees, it was an order that had to be obeyed. This was not done systematically and until the time of merger similar policies were still being pursued.

Classic had no specialised training department and teaching users to work on the system was done as an on-the-job training or by a colleague who communicated meaningful steps of use based on their own interpretive schemes. This was not possible for the older employees who had worked for Classic for a long time. As mentioned earlier, Classic had been founded in 1955.

Classic's technical management expressed that they had no problem in getting their senior management to accept their suggestions for any technical modification or expansion. It was an exercise in reinforcing the structure of signification and basing arguments on legitimation because their requests were intended to keep abreast of technological developments. Even the users were co-operative as they appreciated the need for such changes.

As for Modern, it had been a case of smoother progress. The bank had been founded about a quarter of a century after Classic. It was initially a small financial company. The fact that they acquired a bank and all its assets helped them convert to a semi-automated bank so they did not have to go through many stages of automation. The staff were younger in age and started working for Modern at the same time as PCs were introduced into the market. This made the appreciation of the significance of the use of technology much easier because of the increased general awareness of the advent of computers.

The management were very much aware of technological developments and soon after the official starting date of the bank, they began their feasibility studies as a preliminary stage to introducing a fully integrated on-line and inter-branch banking system. Therefore, the eventual decision was not forced upon users by

enacting a structure of domination but through legitimising use by additional emphasis on the significance of use.

The problems were becoming more noticeable upon the decision to merge. The management of the smaller partner Modern took control and things started changing. The birth of Gamma became a reality and it was time to deal with every day complications. As for the banking operations, the first decision was to unite the central operations of Classic and Modern. As for the information systems, the management requested that all developments on those systems be halted until a decision was taken to adopt one of them. This followed a theme of directives and internal memos and on several occasions, within a relatively short period of time, the management would go back on a decision and introduce a new change. It was a case of creating and recreating a structure of domination as none of the employees could possibly object.

Since the management of Modern took over, it was implicit that the management wanted to erase the remains of Classic, although in real life they kept the name of Classic as the official name after the merger (Gamma is synonymous with Classic but they were given different names while presenting this case in order to avoid any unnecessary confusion). The former employees of Classic found this hard to accept and some described the present management as being distant while they appeared informal to the former Modern's staff. The management did not want to take any unnecessary risk by reinforcing legitimation or signification at the early stage of the merger. It was basically a case of employees having to execute orders which was not typical of the style of Modern's management.

The situation with the systems people was even more troublesome. Classic's technical staff were convinced that regardless of how much they would base arguments on signification, the choice of system was bound to be that which the management had been used to. To the management, they were more concerned with what was best for Gamma and were under continuous pressure to make a quick decision because the problems were starting to become apparent to

customers. Classic's IS management were considered the more senior after the merger and therefore were assigned to head the department. The technical management demanded stronger linkage with the top management. Their argument was based on the importance of conveying their case based on a structure of signification because they had already implemented their system in 15 branches, in addition to the other five branches in the Palestinian self-rule area. The argument continued and they requested a hierarchical link to the GM in order to bypass the assistant GM who was in charge of automation. This had worked initially but the management went back on their decision and linked the IS management to the assistant GM for automation and operations.

Table 7.10: Accounts of the Context and Process Linkage (Gamma)

- | |
|---|
| <ul style="list-style-type: none"> • A significant change from a mixture of autocratic and informal management to an overall control by the informal and more modern team • Variance in the ways of adoption of innovation between the joining partners due to the difference in circumstances surrounding their life cycle and growth • Differing emphasis on the type of structure that was reinforced due to the style of management. It was the difference between forcing the system upon CLASSIC's employees who were not used to it, and the explanation of the significance to MODERN's employees who were very receptive and appreciated it • The primary concern of the senior management was to tighten the overall control over the entire banking operations • The senior management was not prepared to risk resorting to structures of signification and legitimation at the early stages of the life of GAMMA after the merger. This was planned for later in order to nurture a corporate culture • Initial problems due to power struggle over the control of the technical resources. This resulted in bankers taking over and a subdued technical management • A decision based on significance was requested of the committee assigned to deciding on the choice of system to be used |
|---|

The fight for control based on significance continued and the issue was related to the struggle for power. The bankers had decided that the technical staff should not lead this particular project after the failure of the first committee which was charged with the job of deciding on the choice of the system to be used. The second committee had only bankers and soon after that, the head of the technical department resigned.

Table 7.10 illustrates a brief summary of some of the important accounts as concluded from the structurational analysis of the context and process linkage.

7.4.4 Concluding Remarks on the Gamma Case

Gamma had to resolve many issues related to the use of banking IS in the aftermath of the merger. This was fully discussed above and the following summary is especially concerned with IS issues that are related to strategy, design and development, implementation and evaluation. Focusing on those points will help reveal the contribution of this case to answering the question of the role and value of ISs and the attributions of the organisational impacts of those ISs.

Gamma came about as a result of merging Classic and Modern. Both partners had no clearly defined corporate strategy or IS strategy. They worked on short-term attainable goals which is considered normal within the Jordanian context. Survival has become difficult as a result of the increase of the number of competing banks and because of the turbulent working environment. This explains the merger which was originally encouraged by the CBJ. Therefore, the most the organisations could hope for was an increased profitability that would satisfy the small shareholders since public shareholding companies are run by the majority shareholders (in person or in proxy). In order to survive, the management needed to maintain growth and this was seen as possible by planning to increase the customer base of depositors as well as expanding the possibilities of lending to able investors. This strategy was fairly successful for both Classic and Modern but the success was limited and growth became uncertain for the long term. As for the present Gamma, the management knows what it would like to have but there is no written strategy.

As for the IS strategy, there was no full plan or budget. The investment was a case of having to rather than how much was the investment and what was the ROI. For instance, it was noted that the cost of the systems to branches was not based on a charging out of the centrally incurred expenses according to use of the

system. Circumstances have forced the diversion to improving automation especially because it was demanded by the CBJ. In addition, banks needed to provide a speedy service, which was also of high quality, if they were to keep their customers. The way this worked was that as things unveiled an impromptu decision would be made. Therefore, it was contingent planning although requirements would be estimated in the budget. Both Classic and Modern realised that automation could not be delayed any further. It was a few years since they both started their latest attempts to fully automate and their systems were still being developed. Gamma was still at the stage of deciding the choice of system to adopt and one can venture that the IS strategy is to have a fully operational on-line and inter-branch system but this will take years to be completed.

The design and development of the last systems for the two partners went through similar phases. A contract to a software house and further in-house tailoring to suit the needs of the respective banks. The kernel of the system was, in both cases, obtained from a software house. The development was done in-house under the full supervision and co-operation of the software house in the case of Classic, and in-house by the programmers of the software provider in the case of Modern. The implementation was being done simultaneously. The systems were working in the branches of both partners (the majority in the case of Modern and almost one third in the case of Classic). Changes would be made as soon as they were requested and this took a lot of effort but they had no better alternative. As for the new Gamma, they were still running the two different systems as they were awaiting a decision by the committee on the choice of system.

There was no formal post-implementation evaluation of ISs except the brief verbal feedback from users. Both Classic and Modern had carried out some sort of a feasibility study prior to the procurement of their main banking systems. The evaluation seemed to be a luxury in both cases. The systems were not complete which made it harder to evaluate incomplete systems. In actual fact, evaluation

was not of primary concern because the design, development and implementation occupied most of the time. Since this was an ongoing process, they would deal with problems as they appeared.

Furthermore and according to the previous discussion, assessing the contribution of those ISs to the corporate profitability was impossible because of the multitude of influencing factors and since the use of ISs was but one of those factors. In general, the forced change came from the management of the bank and not as a result of using the technology. Therefore, the resulting impacts were mostly intangible and there were also some unintended impacts such as the problem with the internal communication. An obvious example of the resulting significant impacts was related to the disappearance of the accounting department in the case of Modern because the system could prepare the profit and loss statement automatically. There was more emphasis on the finance department and the work of auditing has significantly changed.

7.5 Delta

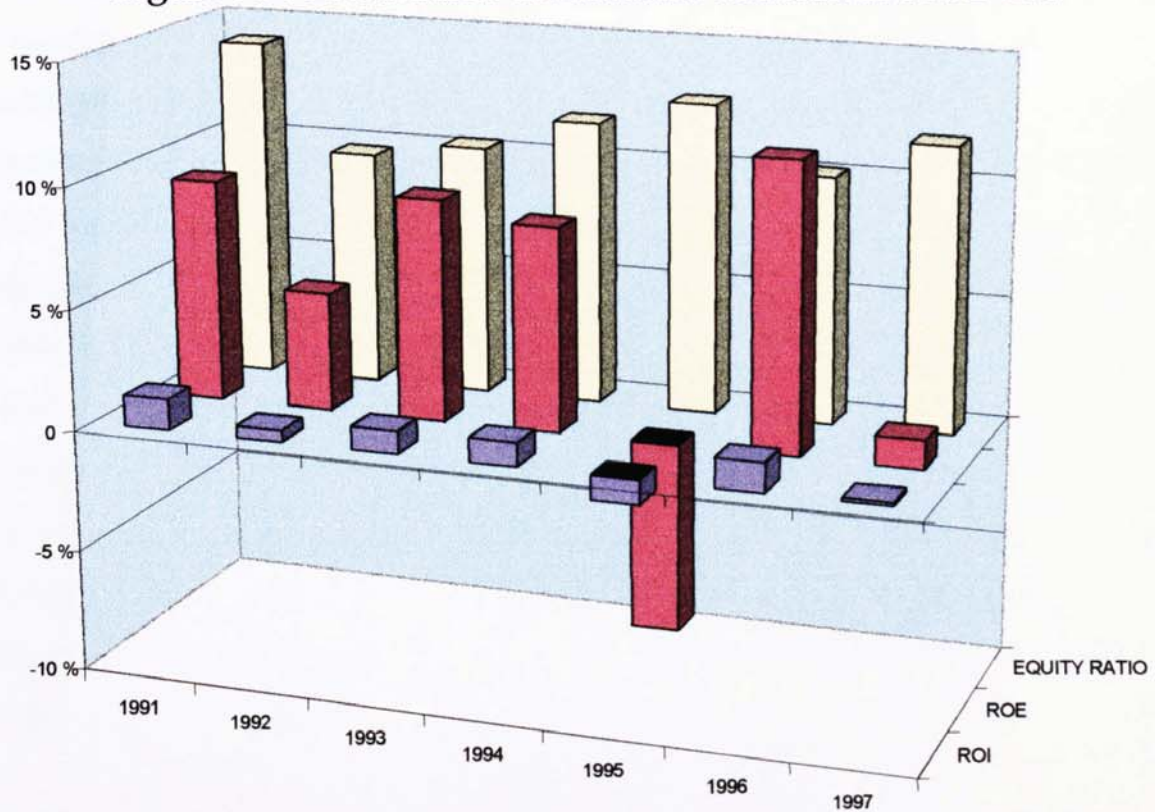
This section presents the fourth organography which is given the pseudonym Delta. Details related to the number of employees interviewed and their types are shown in table 7.1.

7.5.1 Case Overview and History

Delta is a large Jordanian bank which was established as a subsidiary of an Arab Bank that was based outside Jordan. It has approximately 300 employees and was licensed as a fully-fledged commercial bank in 1989 following the restructuring and transformation of a former financial company. The paid-in capital was 10 Million JD until 1/01/1997 when it was increased to 20 Million JD in accordance with the directives of the CBJ. The bank undertakes interest based commercial banking activities in addition to some investment and non-credit services that earn fees and do not rely on investment in risk assets. The commercial banking activities of Delta are also associated with additional ancillary services such as bills, foreign remittances, Letters of Credit, Letters of

Guarantee. On the other hand, its banking services comprise brokerage in securities, corporate financing, security trading and VISA card facilities. In addition, during 1992 Delta played a leading role in founding an independent Jordanian company, owned jointly by five Jordanian banks, which issues the international VISA cards out of Jordan.

Figure 7.7: Economic Performance Indicators for Delta



Delta is one of the fastest growing banks in Jordan. It is medium-sized in terms of the value of total assets (approximately 240 Million JD in the latest published figures for 1998) but it is good, in terms of growth, in comparison with other banks of similar size although its only nine years old. It has continued to achieve satisfactory levels of profitability and growth in the balance sheet. Delta is maintaining a reputation as a client-oriented provider of integrated banking services and products. The number of branches has expanded to 20 branches and offices and the head office is based in Amman. All its branches exhibited distinctive architectural facades and layouts and were intended to reflect the image of a professional bank. Figure 7.7 gives an indication of the economic performance indicators of Delta. The ROI and ROE ratios are still small and the Equity ratio was maintained at approximately 10 % for the period 1991-1997.

Delta was able to increase its share of the Jordanian banking market, notwithstanding the increased competition following the entry of several newly restructured and transformed financial companies. The operating environment for the Jordanian banks is complicated further by the CBJ's restrictive monetary policies.

The mission statement outlined the broad aims of enhancing customer services, branching out when feasible and introducing new services. This translated into a strategy that calls for expanding its product base in commercial and investment banking. Delta's automated, innovative and universal approach of commercial and investment activities distinguished it from other Jordanian banks. The brokerage services were offered by a subsidiary of the bank which does the brokerage, underwriting, fund management and new issue activity. The bank was confident that the emphasis on full-service relationships and further integration of commercial and investment activities with the main shareholder would continue to improve its competitive position within a restructured and dynamic Jordanian economy. The bank contemplates growing its network of branches to target areas of significant commercial potential in Amman and elsewhere in the Kingdom.

In general, Jordanians know Delta as a modern bank with international connections. It has not been marketed as the people's bank but the focus has been on professionalism in terms of work, employees and customers. This involved targeting high net-worth clients. A senior manager summarised this by saying:

'Our initial marketing plan was to seek high deposits and high loans. It was never to have many accounts. We benchmark against the top two banks in Jordan'

Furthermore, the expansionist policies helped the bank to reach a wider scope of customers in the densely populated areas where there were more potential customers. The number of branches and offices is relatively high for a bank that did not exist a decade ago. Delta's customers appreciate the open-mindedness and distinctiveness of the management.

7.5.2 Content

Delta is a young growing bank that has benefited from the banking and international experience of its majority shareholder which is an international Arab bank. The bank and the branches have been computerised ever since the start of trading. This was an initial stage of semi-automation that was intended to manage the early banking transactions but by mid-1991, the available hardware and software were unable to cope with the anticipated business expansion that necessitated full automation of the banking activities. Therefore, the management conducted a comprehensive study in co-operation with a subsidiary of the parent group. The study was completed by the end of 1991 and a decision was taken to have a fully integrated on-line and inter-branch banking system.

The execution of the plan to have a full MIS was initiated in 1992. The objective was summarised in their 1992 annual report as *working to update the existing system by providing state-of-the-art software and hardware for supporting the work of the bank and enhancing its operating efficiency*. It was eventually decided to choose an international vendor who had worldwide experience in banking automation. The system was implemented by October 1993.

All branches are linked with the bank's information system. The branch PCs operate as terminals to the main system, which is located in the head office and the approximate overall total of PCs is 340. In addition, Delta operates 7 ATMs. The hardware is made up of IBM RS 6000 and a number of Novell Networks. The software is the Kindle⁷ banking system; a ready-made parameterised package that required upgrading and modification. The system was not tailor made to meet Delta's requirements and the procured version was not the standard one because some parts were not needed for the work. The bank could not find a

⁷ The IS was mostly referred to as the *Kindle* after the name of the Irish company that had developed it.

reliable and complete banking system locally. The contribution of the MIS department involved the installation and implementation. In addition, the technical support had to train users on the operations as performed on the new system.

The corporate IS provides an extensive banking package that is suitable for a progressive Jordanian bank. It is based on a centralised database. There are a limited number of simple applications that were not covered by the procured package (e.g. special management and CBJ reports). However, the MIS department is managing to add those applications in-house as well as customising certain applications to work within the Jordanian context. For example, they were working on a new program for the Letters of Credit. Amongst the many features available, the IS has an on-line signature verification system, based on visual comparison with customers' signatures as stored, as well as some advanced reporting capabilities. Delta plans to use an internal e-mail system and have just completed the conversion from DOS to Windows working environments. The management was aware of banking on the Internet and smart card technology but they were not considering adopting them at this stage.

7.5.2.1 Impacts of IS

The impacts of ISs on organisations are not always what is originally intended. However, it is more practically realistic to compare against what was planned in order to gauge the accrued benefits. The result of the use of IS translates into a series of intangible benefits because they are not readily substantiable. Even the issue of reducing the number of employees could not be exactly proven because there was a relocation rather than terminating contracts due to expansion in terms of adding more branches. This makes the issue of determinants, which is discussed in sub-section 7.5.2.2, crucial and relevant to investigating the impacts of corporate ISs.

Delta's position on the expected impacts of their IS was summarised by the GM when stating:

'Automation in my view is not to change from manual paper to automatic work but rather to improve the work. There are things that we could not do manually before. We have used the information system to re-engineer our work. Many procedures were completely changed from the manual way of carrying out the work. The present projects are departmental and we are for a radical organisational change'

The following discussion looks at the impacts of Delta's corporate information system at the organisational and individual levels.

Organisational

Since this research is about the role and value of ISs, the main concern is implicitly on the organisational level. This in turn can be investigated in a number of ways and in order to maintain consistency of presentation amongst the four organographies, the focus is made at the strategic and functional levels. These are discussed next.

Strategic:

Delta's management realises that since full data is not available and it is not possible to predict what is going to happen in a turbulent market, they consider that it is not possible to carry out strategic planning for several years ahead but only for one year. For example, the technological changes are faster than any long term strategic planning. The general strategy is based on conservative lending, professionalism of management and improving profitability per employee.

Delta worked according to clearly laid out business plans. They also had contingency plans that are activated upon facing problems which have not been previously encountered. The system is valued in as much as it serves the plan. In principle, the management considered the IS excellent because it was doing the intended job, and they were trying to use it for opening up future possibilities. For example, their figures for 1995 and 1996 showed an average difference of 2000 JD between estimated and realised budget totals. In addition to the direct intangible benefits, the avoidance of the opportunity loss was an important issue

that was worth appreciating. A senior manager explained the overall situation of achievements by saying:

'We overdid ourselves and exceeded what was expected from the system. The daily reports that test the integrity of the data indicate if we have problems with the system. If we have problems we sort them out swiftly and accordingly. At this stage, we are more concerned with the future than the past or the present. We learn some new ideas from brochures of large international banks who work hard to meet their customer requirements due to the fierce international competition amongst banks. On the other hand, our customers are not generally educated in banking and choose from what is offered to them'

The MIS department is of the support type and without direct return since the accrued benefits are mostly intangible which makes the justification of any extra investment harder for the technical management. Delta had no separate IS strategy but this worked as part of the business strategy. Like other departments in the bank, the MIS department would request allocations of sums according to the forecasted needs for the following year. The budget is consolidated in one report with an additional margin for contingency. In addition, an IS plan for the following year is provided. However, the final decision to accept or reject budgeting plans lay with the GM.

Functional:

As mentioned previously, the benefits of the use of the system were mostly intangible. The system has improved accuracy and speed as well as contributing to increase productivity. The accuracy brings savings to customers due to having correctly worked out interest. In addition, Delta was also saving as a result of using the IS. This occurred by having better service and more varied options which in turn led to better satisfied customers and ultimately better reputation and hence more customers. The system has freed employees' time, which gave them the opportunity to carry out other tasks. Delta management explained that the CBJ reports used to be prepared by the tenth day of the month but following the introduction of the system, these reports are completed by, the third day of the month at worst.

It was impossible to work out the contribution of the IS to profitability for the bank. As the GM phrased it:

'There are many other small matters adding up to a really useful system. It is unfortunate though, from a management perspective, that we can not put a number tag on the amount saved due to the availability of the system. We shall continue to try to improve and this does not mean a direct effect on adding to profitability. Well, after all, it is a necessity that we can not do without'

For the individual departments, automation was indispensable. For instance, the VISA department had many transactions that became impossible to process manually especially with the increasing number of Point Of Sales outlets (presently 50 and planned to expand to a few hundreds over a 3 year period). The system is essential for monitoring operations in order to avoid fraud and consequent losses. The department produces a daily report and the system itself was compatible with the main IS. It was written in-house and operated by four employees only. The central accounting and financial control department found the IS vital to guarantee control and scrutiny. The system records the transactions which if entered correctly will be processed correctly. The department manager explained:

'Basically, the preparation of basic accounting records and documentation did not change with the system but the extracted results are different'

The treasury department appreciated the control facilities provided by the system. The ease and control of cash flow was a major issue, besides the advantage of having exact calculations for financial dealings that help guarantee the best possible return for the bank. In addition, the treasury system gives warning messages when limits are exceeded which in itself is an extra measure of control, as well as providing many other possibilities that help automate work. The view was strong that the system has drastically reduced the paper work. For one, confirmation and authorisation is done through the system. This view was not shared with the other employees.

In general, the jobs have changed and have become more varied. The system has noticeably facilitated the link between the users and the senior managers. This implied that the role of the middle management has become less important. The internal communications have been affected because work involves communicating through the system. The *informating* effect of the system was evident because roles and procedures for carrying out the work have become clearer.

Individual

The use of IS in Delta affected individuals. The impacts are looked at here as a by-product of the organisational impacts because the research did not aim to look at the impacts of the IS on the individual per se. Three types of individuals are covered; these are the customer, the employee and the shareholder.

Customer:

The customer is the aim, the centre focus and the objective of all banks. They compete by products and services over how to entice as many customers as possible. This is done based on quality since the market resembles an oligopoly where the margin of price-based competition is narrow. One of Delta's customers explained that what mattered to him was not the ATM service but the general attitude of the bank. Electronic cards may tempt rich people, and by the same token, the financial stability of the bank means little to small depositors. Depending on the type of customer, Delta charged a fee for the VISA card.

A branch manager explained how customers' attitudes differed regarding the use of technology as follows:

'We always have problems with customers and their bank statement. The system has been a fast move and they (customers) preferred the traditional manual way of doing work. This rejection is getting less by the day. The problem is with the old customers and the new ones accept the system without questions'

The emphasis is on how customers are treated by the bank. Having an advanced system helped in facilitating good services. According to a customer:

'Delta sends regular statements while some of the other banks do not bother when there is not much money in the account. The bank waits on its customers as related to settling outstandings and does not nag customers to pay immediately. This was an added attraction of Delta in my case'.

Another customer explained:

'I am with Delta for personal reasons because I know an employee who gives me good service. I was offered a VISA card but I don't need it'

A branch manager played down the role of the IS in influencing customers by explaining:

'Automation does not help in getting customers. We have a nepotistic society. Banks are known for other issues that have little to do with the system. For example, the Housing bank is the one commonly known for the drawing of monthly prizes, the Islamic bank for religious deals on behalf of those Moslems who were not happy with the concept of charging interest and the Arab bank for the traditional reputation as a stable bank run by a successful family. The rest of the banks depend on relations between the individuals and the establishment. Few customers asked about the origin of the bank or who were the owners. They call it Ali's bank (Ali was the name of the branch manager). Some call it the green bank because of the prominent colour on the emblem'

In summary, the IS impacted customers in as much as it affected the services they were receiving. They were pleased with having speedy services and better information related to their banking details. In addition, the itemised statement gave a better impression about the bank but the general interpreted view could be summarised as the confident management were using what they considered was the right tool for delivering high quality service.

Employee:

Procuring a system from an international vendor has proven a useful skilling experience for Delta's technical staff. They have finished implementing the ready applications (as provided in the original purchased package from Kindle) and moved to work on various available options.

The employees have become more satisfied because they no longer need to stay after regular hours to finish the work. This is very rewarding since they were not paid overtime and were expected to work anti-social hours which would mess up their social life. One middle manager expressed a sense of skilling-satisfaction when saying:

'I have been transferred from a simple manual worker to doing the full work on a screen which is a huge change by any standard'

The basis of the work was the fair treatment of employees and this resulted in having a rather low power distance factor. Their assessment, for example, was not confidential and was done in the presence of the employee concerned. It was planned to encourage individuals to work harder.

One negative aspect of the use of the system can be looked at as the added stress as a result of the accountability. The system exposes people through the mistakes they make in the fastest possible time. As far as the work is concerned this is a plus point because it reduces the chances of propagating errors and hence avoids any unnecessary loss. This is a control mechanism that adds to the multitude of the system-accrued benefits.

Shareholder:

Similar to the other cases, Delta had shareholders that would like to see their shareholder equity multiplied in addition to favouring receiving a yearly dividend. This, to a large extent, is being achieved by the systematic planning. Customers and shareholders alike know the fact that the bank is using advanced technology. Furthermore, Delta is reputed to have professional management and employees. These factors boost the confidence of the owners of the bank regarding present and future prospects.

There is one more important issue that distinguishes Delta and that is having a majority shareholder which is an Arab international bank. This had the double effect of pushing the work to international standards and providing further confidence to customers and employees. It is a typical case of reciprocity as the IS

has impacts on the shareholders and the majority shareholder pushes for engendering those impacts.

7.5.2.2 Determinants of Impacts of IS

The impacts of the use of IS were discussed in the previous sub-section. This is followed by a discussion of Delta's specific factors and considerations that might have played a role in the realisation of those impacts.

Technical

The technical management considered that the banking system had not been in use for long and therefore could not see the need to carry out a formal post-implementation evaluation of the IS function. In addition, some modifications are still being made to the system which means that it is not a complete working system. The senior management expressed the view that they were interested in evaluating the performance of the system but so far they judged it based on the continuation of the service.

However, there was one attempt to perform the evaluation which involved distributing a questionnaire to the different users. The operations department carried out the evaluation and the MIS department had a consultative role that involved checking the presentation of the questions. It was a survey-based evaluation that made use of the limited customer feedback. The questionnaire included questions about *other not-available applications (more automation), suggestions on how to improve services and the system in general and what problems the users were facing while using the system*. This exercise was considered a failure as it had basically focused on issues related to customer satisfaction and complaints. Beside, the management was not sure of what was actually required and the responses returned were not satisfactory in terms of their contents. A senior manager explained his views on what is actually happening on the ground by remarking:

'We know that the system is working from the daily audit reports. In addition, we check for customer and user satisfaction whenever possible as I could not possibly tell from where I am situated'

The MIS manager in Delta was a qualified engineer who had been promoted to be an Assistant GM and was still in charge of the department. This was an important determinant for guaranteeing the momentum that is needed to encourage development and maintain contact for receiving follow up on the corporate use of the system. The actual number of technical staff who provided the necessary technical support was 9. This figure seemed to be enough and this may be attributed to the high degree of integration and sophistication of the banking system.

The banking procedures are unified and complete and available to users in full documentation. In addition, the bank runs courses to train employees on the use of the system and the banking operations. Therefore, Delta provided clear guidelines and training of employees for carrying out the retail banking work.

Organisational

A senior manager summarised what distinguishes Delta (this was a general theme echoed by all of the managers in the bank) by saying:

‘The bank is distinguished in a number of ways. The efficiency of the management for one. The other is related to the services supported by the system. A third is the strength of having an international link and the spread of the branches of our major shareholder World-wide. Fourthly, we have a business plan and goals that are objectively done’

A main strategic aim for Delta was ‘to stay ahead’ as the GM explained. The IS played a great role in achieving this especially in ‘a small and tough market’ where banks have to offer more services for less cost. The introduction of new services and products, facilitated by the IS, helped increase the choice and meet prospective demands. This philosophy was the most important driver behind the bank’s progress and also a vital catalyst for instilling a solid foundation for a corporate culture.

Another important determinant that was clear in the case of Delta was the full involvement of the management in IS affairs and their thorough understanding of the situation. This can be seen in the following quote by the GM:

‘we look at our needs, in terms of system power and capabilities, and meet that without second thoughts. We take it very seriously when we realise that we can not do without. To us, the system is more than a tool that we could use or do without. This I guess applies to other banks but we invest in information systems for the present and the future. We know that we have met our existing needs but we worry about lagging behind or not being able to offer a product that is being offered by a competitor due to some technical limitations. This can be bad for us and have long-term repercussions but the important point here is that we do not stock unused or unneeded technical capabilities. It is just what we need and can be upgraded to accommodate future expansions. In the light of that, we instruct our information systems department, who is very much involved in what is to be done as our internal consultants’

This in itself was a great driver for guaranteeing the course of the right path for fulfilling planned strategic goals.

In addition, the employees were highly qualified and experienced (all interviewees in Delta, except for two who had 40 and 16 years of experience respectively, were qualified to a university level) and receptive to learning. Delta had encountered little resistance when introducing the system. They offered full training and gave the user ample time to get used to the system. However, it was made clear to those employees that whoever is not willing to learn and continues to resist, has no other alternative but to leave the bank.

Environmental

The local economic situation had gone through bad phases ever since the establishment of Delta. In addition, the situation was made worse during and in the aftermath of the Gulf Crisis when 400,000 Jordanians returned after having worked as expatriates in the Gulf countries. On top of that, the number of competing banks has increased considerably. This made the working environment tough and very competitive.

Furthermore, the CBJ posed some hindrance to a bank like Delta who was directly exposed to an international experience by virtue of having a majority shareholder that was a bank. Delta would like to offer services and products that are not readily available in the Jordanian market. However, this was not being facilitated because the CBJ was not technically equipped for monitoring such proposed services. Only a few of the Jordanian banks face similar obstacles.

7.5.3 Context and Process

Delta is a relatively new bank that has had the same management ever since it was established. It started as a small bank with one branch and has expanded to having 20 branches and offices. The management considered that the bank was still at the set-up stage. As for the financial figures, Delta managed, on average, to increase the growth of its assets and earnings by a small percentage each year (see figure 7.7). This was close to the average ratios in the BFCS, and is therefore acceptable if one considers the large number of Jordanian banks and regional economic and political instability. However, the investment in the IS was high if one looks at the size of the organisation. The management estimate for the total investment in IS was put at 200,000 JD per year.

It was apparent that the management had the vision and plan for introducing change. They did not waste time in actually doing that. For instance, with the aid of the IS, the control over branches and departments was centralised and the power of the final decision lay with the GM who was also the Vice-Chairman of Delta. It was initially a tightly centralised control which limited the possibility for manoeuvring as related to impromptu decision-making. This has been changing to widen the scope of active participation of branch and department managers.

The total number of senior and middle managers was 24. They worked as a harmonious team and the conflicts were minimal. The major senior and middle managers met every two months to discuss the banking affairs. Therefore, all managers were practically aware of and also part of the implementation of the strategic plans.

Delta faced a state of bewilderment in the year that followed the implementation of the system. This was due to the fact that the automation involved a dependency on the system for everyday work. For some of the employees, it was hard to accept having to forsake their knowledge about manual work and start from scratch to get used to the new working environment. In some cases it was not the problem of using computers but the fact that the work became easier even for beginners. One of the young users explained the problem by saying:

‘The system simplified the banking operations and made the way of performing such operations straight forward’

Table 7.11: Some Elements of the Social Context (Delta)

<u>Historical Context</u>
<ul style="list-style-type: none"> ● DELTA was founded in 1989 and the actual banking operations started in 1990. ● The time of founding the bank could not have been worse. The Jordanian economy was coming out of a currency devaluation and it was the year when the Gulf Crisis started. In addition, a number of competing banks came into existence at that same time ● The bank used to be a financial company and the change included having a majority shareholder who was an Arab international banking group that was based outside Jordan ● The management was competent with a clear vision for the future of the bank ● Over a period of only eight years, the bank expanded to having 20 branches and offices and approximately 300 employees ● The management adopted a systematic way of institutionalising technology and they were assisted by their professional employees
<u>Social Relations</u>
<ul style="list-style-type: none"> ● The majority shareholder kept in close touch with the bank and provided continuous support to the management ● DELTA was run by a total of 24 senior and middle managers who got on well amongst themselves and with the GM ● The MIS department maintained regular contacts with the users and were proficient in providing technical support
<u>Infrastructure</u>
<ul style="list-style-type: none"> ● The management was co-operative and committed and was aware of the power of the MIS ● Banking operations were automated to a large extent and the technical staff were coping well in introducing modifications and changes to existing applications ● Employees were skilled and experienced and that made the majority of them ideal users of the system ● System capabilities were under-utilised

Some of those resisting employees were not willing to teach others what they knew because it was a competitive advantage that would distinguish them from the others. A manager expressed the view that the system can help skill but could not influence all people to change their ways of thinking. This was summarised by stating:

‘Employees differ in their personal attitude to change. Some personify matters and others work as true members of the organisation. This depends on the person and not the system or its use. The system can be made use of in accordance with what is technically required’

The social construction of technology was different for the different users and that in itself depended on their background experience as well as their qualifications. In Delta’s case, the management had to push for a quick institutionalisation of the technology. It was a relatively short time to *stabilise* the interpretation of the artefact by employees because the *relevant social groups* were encouraged to (had to in certain cases) and the view of the senior management was the dominant factor.

Some elements of the context as previously discussed are summarised in Table 7.11. The coverage extends to aspects related to historical context, social relations and infrastructure.

7.5.3.1 Cultural and Political Perspectives

The senior management of Delta considered that they have their own corporate culture which distinguished the bank from its competitors. According to a senior manager:

‘This culture is based on system/technology whereby we are either implementing advances in technology to improve services or pushing an idea’

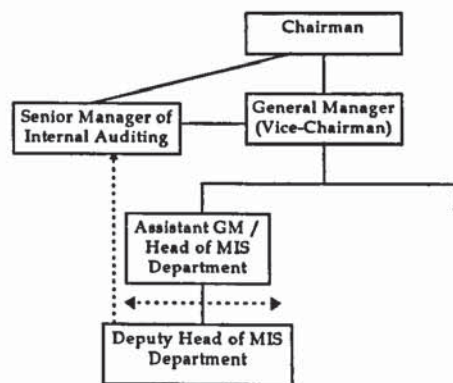
Having good management needs to be complemented with responsive employees who should play their part in bringing about change. Delta had the vigilant management but their directives to improve system-enabled work fell on deaf ears in some cases. A managerial user pointed to the lack of reciprocity by the users and explained this by saying:

'The management sends memos emphasising the importance of submitting any requirements that may improve the work. The problem is how to arrive at the efficacy of such procedures. The memos are filed and little attention is paid to this. The e-mail that we are supposed to have soon could help with such problems. The user is exposed to situations that his busy manager does not notice'

There was limited pressure on Delta to increase employment but the management has resisted that. People who approach the bank, through a third party, to apply for a job can be recommended to take an extensive test. The management is very strict about employing only those who manage to pass the test. This actually shows in the quality of employees who continue to attend training courses from a specialised internal training department. A middle manager linked this to the corporate culture by explaining that:

'We have a particular culture. Our employee is chosen according to certain specifications and is evaluated after 3 months. We follow up and monitor achievements, responsibilities and targets. There are no emotions involved here. We are not a charity institute. We have the management by wandering around kind of work. The university gives the background but it is mostly irrelevant to the banking work. Of course with perfect knowledge you have good banking practices'

Figure 7.8: Delta's IS Management



The MIS management considered that their power had increased as a direct result of the use of a sophisticated system. This view seemed to be shared by the senior management and the middle management in general. A technical person is a more qualified person to by-pass security measures and it is important that a trust-worthy person occupy such a position. As can be seen from figure 7.8. the

fact that the direct manager of the MIS department was an Assistant GM made the department more powerful.

On the other hand, the treasury department considered that they were the most important to the bank because they have control over the whole liquidity of the bank and its branches. However, the power was financial and could not be applied to influencing the senior management on other issues of relevance to running the bank.

Table 7.12: Cultural and Political Perspectives of Change (Delta)

<p><u>Cultural Perspective</u></p> <ul style="list-style-type: none"> • The senior management realised the importance of having a unified corporate culture that was system-based • Senior and middle managers echoed the strategic guidelines as outlined by the GM • Harmonious working environment amongst employees with no subcultural conflicts
<p><u>Political Perspective</u></p> <ul style="list-style-type: none"> • Decision making was centralised with the GM/Vice Chairman having the main power as deputised by the Board of Directors in general and the major shareholder in particular • The MIS department was influential because of the central role of the system • Centralised control was enforced by the use of system-facilitated authorisation • Employees had a fair and direct assessment as the principle was to improve productivity and work performance • Besides the MIS department, the treasury department was powerful due to their control of financial investments. In addition, branch managers gained power due to having valuable personal contacts with customers

Branch managers were also in powerful positions because their presence was an attraction to some of the customers. This is not a system related issue except in so far as having to remove the terminal from the manager's desk because some customers were complaining that the branch manager was not giving them much attention. The important point is that having the system, besides providing useful details to inform clients, has spared the time of such managers so as to pay more attention and socialise with those high-net-worth customers. This situation is not peculiar to Delta.

Table 7.12 illustrates a summary of some of the major points related to the cultural and political perspectives of organisational change due to the use of the IS in Delta.

7.5.3.2 Structural Analysis of the Linkage between Context and Process

Delta started at a time of difficult economic conditions for Jordan and its organisations. At the same time, there was a large increase in the number of banks. Therefore, it was important for the management to make the right start. The driver was, in essence, having a major shareholder that was a bank. The transfer from a financial company to a bank and the facilitation engendered by having an already successful partner meant that Delta did not have to go through the classical steps of progressing as a newly established bank.

The vision was clear and so was the concept of having a business strategy that could be translated into an executable plan. The majority owner did not need to create a structure of domination for getting the ideas through. The shareholders chose to buy the new offering because of the anticipated confidence in the bank due to the link with the international partner. Furthermore, the training department with the heads of departments as the main lecturers was instrumental in explaining work and instilling the corporate culture.

Delta's senior management planned to use an initial system and replace it with a more comprehensive one after the inception of the bank into the market. Employees were selected carefully and the management resorted to enforcing the structures of legitimation and signification from day one. The technical background did not seem to be a point that the management focused on as a major criterion for Delta's choice of employees. This was a crucial issue that was to result in limited user resistance upon the introduction of the Kindle system.

The bank started growing and phase 2 of the plan was about to start. At the same time, the employees were expecting this due change because of the fast growth. By that time, Delta had seven branches and it was relatively easy to select a

system with a limited capacity. However, the management chose to go for a system that was efficient in terms of doing the jobs at hand, effective in terms of optimising the execution of those jobs and expandable to accommodate future needs.

Having an advanced system and a professional MIS management was an effective combination that tied in nicely with the corporate vision and strategy. This was even further improved by having the MIS department under the direct supervision of an Assistant GM. The senior management was creating and recreating the structure of signification by drawing on the interpretive schemes of the management team involved. This was supported by the legitimate need to have a system that would put the bank in a leading position. The management would benchmark against what they considered the best two banks in Jordan.

In addition, the need to get engaged in providing extensive support to users was largely reduced due to having an advanced system. The technical staff were quite adept to carry out the task if needed. They were very much in touch with the users who were involved in the design and development of modifications to the existing system and the communication was based on the significant of having as complete a system as was possible.

The majority of the employees were receptive and appreciative of the integrated strategic plans. As for those who were not, all possibilities were exhausted. The management would enforce the signification and legitimation by memos and as a last resort it would draw on facilities to enforce the domination and control of those concerned. If the employee condition was stagnant then there was no other choice but to give the ultimatum and the threat of redundancy. This was in rare cases especially when it was against the management policy to sack employees because of future plans to expand. The bank is lean and has a relatively high profit per employee ratio.

In general, the climate in Delta was stable. The management wanted to make sure that the plans were implemented and the employees understood the message. The reputation of working for a successful organisation was morale boosting to all because it was normal to compare organisations and especially those in the same industry.

Table 7.13: Accounts of the Context and Process Linkage (Delta)

- | |
|---|
| <ul style="list-style-type: none"> ● The major shareholder (a bank) was drawing on their accumulated experience and created a structure of legitimation in order that the subsidiary benefits from their own background. There was virtually no one with power to object ● A provision for having a comprehensive banking system is planned. The signification is explained to new employees by the communication of meanings ● The management enforced the structure of legitimacy of comparing DELTA with its competitors based on the use of an advanced MIS and the significance of such a step ● The selection of the system was based on signification and legitimation as understood by members involved in the stakeholder analysis (the majority shareholder, the GM and the technical management). The decision was not forced but rather agreed upon unanimously ● Drawing on the interpretive schemes and norms was the choice for dealing with employees resisting change. Eventually, the structure of domination had to be enforced because it was against the interest of the bank to have such employees who were not willing or able to get accustomed to the new working environment ● Centralised control was prevalent and this was assisted by the authorisation system as facilitated by the MIS ● Convincing financial figures made it easier for the senior management to enforce the structure of legitimation and gave way to enforcing domination when needed to achieve strategic objectives ● A signification structure of a business focus was established |
|---|

The centralised control reflected the enforcement of the structure of domination. However, the management could not jeopardise such a financial organisation by giving a free hand for taking important financial decisions that will readily, and severely in some cases, affect the bank. Nevertheless, the idea of decentralising was not dismissed but rather rationed. It has become as free as could be managed, beyond which limit it would have been dangerous for the establishment as the senior management viewed it.

A summarised list of some accounts that were considered relevant to the structural analysis, involving the linkage between the context and process, is shown in table 7.13.

7.5.4 Concluding Remarks on the Delta Case

Delta was a fine case to stand as an exemplar in the structured use of corporate ISs amongst the Jordanian financial organisations. It was therefore an ideal case for investigating IS-related issues that gives a wider view of how it all came about. This section provides a summary that focuses on the issues of strategy, design development and implementation as well as providing a useful note on the evaluation of the IS as was applied in Delta.

The bank had a clear business strategy based on achieving continuous growth that would maintain a high degree of profitability per employee. As for the issue of survival, Delta was keen to have all the means that will guarantee successful future working conditions and results. This included having an advanced IS with decision support capabilities. The comparison was not with the banks of similar size and age but rather with the best and this has proven to be a useful motivation. The IS strategy was not a separate issue and there was a strong indication of the strategic fit between the business and IS strategies.

The management used the IS to re-engineer and drive the work. In addition, the case was a clear example of the integration of the business strategy with the system strategy. The IS was creating products and opportunities that were not possible before the advent and use of such a system.

The first phase involved having a system from a local vendor. The capabilities were limited and it was intended to carry the bank to the second stage of having a more advanced and expandable system. The design, development and implementation of the present information system was done simultaneously. In fact, the management considered that the implementation stage is not complete yet. The system was designed by the Irish software company Kindle, and the

customisation work was done in-house. The actual period of introduction was three months and the remaining time was spent working on the system and learning how useful it was in executing the work. The implementation part was easy because the bank had a limited number of branches and based on that experience, the work was much easier for newly opened branches.

Delta had one attempt at evaluating the system by means of a questionnaire that was distributed to users. The feedback was not exceptional. Realising that continuous feedback was needed, the management remains in touch with the users and often requests, by directives and memos, that they report problems and explain any needed modifications along the way. Similar to the other cases, the assessment of the accrued benefits was difficult. It was clear that the IS made the work easier, faster and of more quality but these were intangible benefits. Even the reduction in the number of employees could not be verified because the bank relocated them due to expansion.

7.6 Summary

Chapter 7 was instrumental in providing the foundation of the research analysis with the aim of directing the analytical focus to answer the problem of the research. Therefore, full organographies were outlined with the aid of the research framework as was established in chapter 5. The next chapter presents the analysis of the survey (part II). The aggregate or cross-case and cross-part analyses based on what was presented in chapter 7, and will be included in chapter 8, are covered in chapter 9 of the thesis. The aim of such ordered coverage is to be able to synchronise and elaborate empirically supported answers to the three main questions of the research.

Chapter Eight

DATA ANALYSIS: A SECTOGRAPHY OF THE JORDANIAN 'BANKS AND FINANCIAL COMPANIES SECTOR'

8.1 Introduction

This chapter presents the analysis of the survey of all financial organisations (JFOs) in the Jordanian banks and financial companies sector. The survey was carried out during part II of the fieldwork.

The majority of the questionnaires distributed to senior (SENIOR) and MIS/computer (MIS) managers were filled in during the presence of the researcher. They were therefore more like structured interviews. The third type of respondents were managerial users (USER). Table 8.1 shows the questionnaire response statistics. Fourteen of the organisations in the population participated; the two rejections came from organisations that refused to give access for either of the two parts of the research.

Table 8.1: Questionnaire Response Statistics

No.	BANK	MIS	SENIOR	USER	TOTAL
1	ISLAMIC	0	1	12	13
2	HOUSING	1	1	12	14
3	PHILADELPHIA	1	1	12	14
4	ABC	1	1	15	17
5	JORDAN	1	1	15	17
6	CAIRO/AMMAN	1	1	11	13
7	AHLI	1	1	10	12
8	ISTITHMAR ARABI	1	1	10	12
9	INMA'A SINA'I	1	0	7	8
10	ARAB	1	0	11	12
11	JORDAN & GULF	1	1	9	11
12	ITIHAD	0	0	10	10
13	JORDAN KUWAITI	1	1	13	15
14	BEITUNA	1	1	11	13
15	URDUNI ISTITHMAR	0	0	0	0
16	SHARQ AWSAT	0	0	0	0
TOTAL	-	12	11	158	181
MAX/TOT	-	16	16	240	272
%	-	75	69	66	67

Specialised and general organisational data were extracted from SENIOR and MIS management' questionnaires. Naturally, these were organisation specific. In

addition, as discussed in chapter 6, further primary data was collected from organisations (annual reports, limited relevant documents and non-participant observations) and the Amman Financial Market. Details related to respondents were also obtained. Questions from the three different questionnaires were grouped so as to bring out the relevant and most interesting points for later use in the analysis. A compiled list of 'triangulatory' questions was prepared for the purpose of comparing responses from the different types of respondents (included in appendix III). The analyses of these sets of questions were indispensable to gathering an aggregate understanding.

The questionnaires of part II and the analysis of the survey were discussed in section 6.3.3. It is important to add here that the order of questions in the analysis does not match the order in which they had appeared in the presentation of the three questionnaires. This followed the logic of presentation to the respondent as it was considered necessary to group questions in a certain manner and leave the ordering until the analysis stage. Furthermore, during the analysis all the questions contained in the three questionnaires were grouped according to the categories which have been employed to serve the explanation of the sectography. It was necessary to use the aggregate list of data for all questionnaires, the triangulatory list, the summarised list for the different questions under each group as well as the output for each question(s) that illustrated the responses from the three types of respondents in each of the participating organisations.

The following presentation of the sectography focuses on presenting the role and value of information systems in JFOs as was discussed in section 5.2.1. In the process, it gives a review of what ISs are used in the sector and discusses their working contexts. The aim is to give a general view about those organisations which is intended to aid in eliciting the impacts of ISs and explaining the attributions of the variations in the resultant impacts as will be discussed further in chapter 9.

8.2 Strategic and Functional Impacts of ISs

The survey has attempted to tackle the problem of studying the role and value of ISs at different levels in those organisations. The following presentation discusses the strategic and functional impacts of ISs.

8.2.1 Strategic Impacts

The senior management and employees seemed to share the view that ISs were not introduced to reduce the number of employees but this was a by-product of the use of the new technology. Similarly, they seemed to agree that the change due to the introduction of ISs did not have negative effects but gave rise to new kind of problematic situations that needed prompt resolution. The IS was primarily a tool for co-ordinating the work between departments and consolidating the data and communications between the head office and branches.

Table 8.2: Importance of Objectives for Strategic Planning

OBJECTIVE FOR STRATEGIC PLANNING	RANK
Stability and survival	1
Enhancing the organisation's reputation	2
Reducing risks	3
Offering diversified, developed and quality services	3
Increasing number of customers and expanding	5
Achieving high profitability	6
Increasing return on investment	7
Increasing market share	7
Facing competition	9

Table 8.2 illustrates the essence of the strategic planning in JFOs in terms of relative priorities. Contrary to the order of importance for the considerations related to the usefulness of ISs and the evaluation of ISs as will be shown in tables 8.6 and 8.10 respectively, the focus here was set on stability and survival. This was the choice of the JFOs that had strategic vision and were looking ahead. The JFOs were aware of the importance of having a good reputation but they were

mostly concerned with reducing the risk which was seen as an indirect way of making profit. Obviously competition was not a high priority strategic concern for the majority of the JFOs although the majority of those organisations stated that their ISs were important for carrying out marketing studies. One can summarise this by stating that Jordanian banks wanted to continue working. This meant having a wide customer base and offering those customers diversified, developed and quality services. Consequently the profitability would be expected to accrue. Table 8.3 summarises the strategic impacts.

Table 8.3: The Strategic Impacts of ISs in JFOs
(Based on Part II)

- | |
|---|
| <ul style="list-style-type: none"> • A by-product of the use of ISs was to constrain employment • Helped maintain stability and survival • Little help in increasing ROI or market share • Modest contribution to face competition • Helped reduce risk which was an indirect contribution to profitability • Helped in co-ordinating work and consolidating data and communications between headquarters, branches and departments |
|---|

8.2.2 Functional Impacts

The functional impacts of ISs in JFOs were generally those related to the productivity of individual operations and the running of the day to day business. These are discussed in the following paragraphs under the headings of general organisational impacts, direct impacts on the individuals and structural impacts. A summarised list of the functional impacts is presented at the end of this subsection in Table 8.4.

8.2.2.1 General Organisational Impacts

The IS was deemed speedy, in the majority of cases, with adequate numbers of support staff. Most of the systems were expandable and integrated. However, in one case, the IS manager went as far as recommending that the system should be replaced. Three of the organisations have acknowledged having some degree of disturbing system shortcomings. The understanding of the system's operations

by users was generally high and the information provided by the respective IS, was unanimously considered comprehensive, accurate and timely. The IS did not generally reduce the use of paper as the manual side of the work constituted an important part for the completion of the banking transactions. There was an inclination towards agreeing that IS had, to a large extent, routinised work. The majority of technical and senior managers in those JFOs that responded shared this view.

The vital role of information systems was realised by all organisations in, for example, the possibility to add to the organisational capacity to modernise and innovate but the benefits obtained were mostly intangible. In eight cases, it was used for marketing studies. However, the contribution of IS to profitability was indirect as the main purpose was the automation of working procedures. It was seen as a tool for cost saving, rather than a decision support tool.

8.2.2.2 Direct Impacts on the Individuals

The IS gave little personal gain; nor did it help in devising ways to discover talented employees. The effects on job security, job satisfaction or increasing the employee's ability to take decisions were minimal. In addition, the ISs were not seen to contribute to learning the banking operations or maybe even encouraged laziness when it came to doing mathematical calculations (a de-skilling effect). The employee has become system dependent with little creativity and innovation. The internal communication suffered as a result of having the system and the technical learning was limited. Employees' mistakes can be detected sooner, which albeit being better for the organisation, and because of the informing characteristic of ISs, the employee gets pinpointed for committing such mistakes.

User Satisfaction

The users of ISs in JFOs were broadly satisfied with the quality of information received. They also considered that the systems were generally effortless and easy to use. Despite the user satisfaction, some of the senior management

expressed a lack of satisfaction with the performance of their systems. In two cases, it was considered extremely odd that the senior management expressed the least degree of satisfaction while their technical management were extremely satisfied. The users in these cases expressed above average satisfaction. This could be attributed to the difference in perspectives and the respective roles in serving the strategic objectives. The contrast was also clear when responding to questions related to the need for changing the entire system. Some technical managers saw this as necessary while their senior management did not agree.

Realising that many banking operations could not be performed on their systems, naturally not all users were satisfied with the comprehensiveness of those systems especially when they had many problems and complaints. As far as the individual user was concerned, there was no increase in personal reward linked to the use of the system. This can perhaps partially explain how the users, even in the JFOs with the most advanced systems, demonstrated lack of enthusiasm towards the system whereas their technical management considered that the users' response was excellent.

8.2.2.3 Structural Impacts

The organisations had hierarchical structures. Some managerial users did not specify who their direct superior was. This reflects an unclear command and control system. In another word, a top manager might contact a junior employee and overcome one or more management layers. This is not because of management style but because of personal preference. In general, ISs in those organisations showed little effect on organisational structures or formalisation. The users and technical managers gave varying views on the role of ISs in increasing the span of control. Over 50 % were of the opinion that there was no effect while the others considered that some change had taken place. With the exception of the IS department, the system did not have a concomitant influence on increasing power content of work positions. Organisations reported that the work had become decentralised but control was recentralised due, in the case of on-line systems, to having fully working authorisation schemes.

**Table 8.4: The Functional Impacts of ISs in JFOs
(Based on Part II)**

<p><u>General Organisational Impacts</u></p> <ul style="list-style-type: none"> • Improved speed of operations • Automated working procedures • No reduction in the use of paper • Routinised work • Potential addition to the capacity to modernise and innovate • Benefits obtained were mostly intangible • Used by some organisations for marketing studies
<p><u>Direct Impacts on the Individuals</u></p> <ul style="list-style-type: none"> • Gave little personal gain • Provided little help in discovering talented employees • Minimal effect on job security, job satisfaction or enhancing the employee's ability to take decisions • ISs did not contribute to learning banking or technical operations • Some de-skilling impacts due to full dependence on system • Impacted internal communications • Tighter control by quick spotting of mistakes caused stress
<p><u>Structural Impacts</u></p> <ul style="list-style-type: none"> • Little effect on organisational structure or formalisation • Lack of informal communication between top management and employees • Limited effect on enlarging span of control • Increasing power content of work positions was seen as limited to IS department • Decentralisation of work and centralisation of control • Users considered that the use of IS helped reduce managerial levels but the managers did not report change of positions

All JFOs seemed to have accepted that ISs help speed up decision making. As for the issue of centralisation, the management and the users did not seem to see eye to eye. The senior management considered that they were decentralising but the users were doubtful and stressed that they could see tighter controls. This shows a lack of informal communication as a result of the top-down style of management and decision making. In addition, it could be taken to reflect that internal politics played important roles in managing those organisations. Furthermore, most of the managers stated there was a large degree of delegation of decision making in comparison to the period prior to the introduction of the system.

As far as the managerial levels were concerned, most of the managers did not think that they had much changes due to the use of the IS. On the other hand, the organisational users had a different opinion as they stated that there was a decrease to the number of levels.

8.3 Determinants of the Impacts of ISs

The determinants of the role and value of ISs are those factors that affect the performance of these systems and therefore determine their role in being more valuable to the organisations in which they are used. Researchers such as Mansour and Watson (1980) discussed the determinants of computer-based IS performance. The following sub-sections present the determinants of the impacts of ISs which are classified in accordance with the original theoretical basis as organisational, technical and environmental.

8.3.1 Organisational

The oldest organisation reported having an IS department from 1965. Conversely, in one case, the system had only been introduced in 1996. Of the organisations that reported having a special systems department, only two seemed to have been named 'IS department'. Other names given were: executive department for systems, automatic systems department, computer systems support department, department for development of computer and systems, and computer department. The management and reporting of this department was not standard. Some reported to an Assistant General Manager for banking operations, while the majority were reporting directly to the General Manager (GM). As for evaluating and endorsing plans it was mostly the GM, and automation committees in two of the cases.

There was no common understanding of what an IS was. People seemed to be practical and did not pay much attention to definitional issues. Generally, when asked about the IS, it was interpreted that they understood it as their banking system. Questions were specifically targeting matters related to this enigma.

The culture and subcultures were not clearly demarcated. It was not indicated from the different responses, in any one organisation, if the users of the system could be grouped to reflect a distinctive subculture. In addition, what the senior and technical managers considered in line with corporate plans was, in some cases, seen differently by users. This in itself could be taken to imply that instilling a corporate culture has not so far proven to be a success in the JFOs. The multiple meanings, in some cases, were so far apart. For example, on the question 'the information system has many disturbing shortcomings', the answers varied between total disagreement and total agreement from users of the same system in the same organisation. A similar comment can be made about the question on the issue of 'the reduction in the use of paper because of the introduction of the IS'.

8.3.1.1 What do JFOs Think about themselves?

Six of the JFOs presented themselves as ranking in the top 5 best performing banks while the others were more realistic in presenting what the researcher considered was the right ranking in terms of the corporate performance. In this regard those banks were not generally comparable in terms of performance because of the age and relative size.

The JFOs gave differing reasons on how different they were to their competitors. Five of them chose to express their difference in terms of 'finance sources'. Three said they offered varied facilities and two mentioned having distinguished management. One of the JFOs expressed that they offered low cost services which made them different to other competitors. It was unexpected that none of them would select the employees as being a distinguishing factor although this was evident from part I of the research at least in one case. As for the capabilities of employees and background experience to carrying out the required work, the JFOs gave varying answers which ranged from good to excellent but the employees were not in agreement as almost invariably they considered that they lacked something in that department. On the other hand, the senior and technical management expressed that there had been an initially large degree of resistance

to change by employees. The employees seemed to de-emphasise the issue but confirmed that at some time there was some resistance.

8.3.1.2 Strategic Thinking and Planning in JFOs

Out of a total of 12 banks, six of them said that they have a mission statement. However, only two of the participating organisations managed to express it in writing. When the senior managers were asked about the existence of a strategic plan they provided a conservative answer, without a clear yes or no, that can be interpreted as if there was something but they were not sure what to call it since it was not done systematically. The investment in IS was a strategic necessity to seven of the responding JFOs while two considered it as an investment in another asset and 4 expressed that it was a necessary expenditure. Table 8.5 summarises responses to some of the strategic planning questions.

Table 8.5 : A Summary of Responses Related to Strategic Planning

Issue	Number of JFOs Agreeing
Having a mission statement/in written form	6/2
Investment in IS as a strategic necessity	7
Investment in IS as an asset	2
Investment in IS as a necessary expenditure	4

As far as the IS is concerned, over 50 % of the responding JFOs stated that they had a clear strategic plan for the IS. The technical managers were not inclined to report that they had short term as well as long term planning for the IS department. However, the senior managers stated that there was short term planning for the IS but did not seem to be affirmative about the long-term aspect. This could be due to realising the obstacles and uncertainties that hinder the production of such long-term plans. Managers stated factors such as the small size of the economy and the turbulent environment, the competition and the constraining role of the central bank of Jordan. In another question related to obstacles, all senior managers were of the view that there were factors, such as the political instability, that made long term planning difficult whether for

producing a corporate strategy or an IS strategy. Yet, the JFOs seemed confident of the strategic fit between those two strategies.

Table 8.6: Ranking of Reasons for Usefulness of IS

REASON FOR USEFULNESS OF IS	RANK
Because it helps improve the quality of the banking operations	1
Because it increases the amounts of work handled by employees	2
For stability and survival	3
Because it improves the organisational capabilities to modernise and innovate	4
To help increase the speed of decision making	5
Because it increases the profitability	6
To enhance employees' ability to take decisions	7
Because of its effortless and simplicity to use	7
To help show the importance of employees based on their skills in using it	9
Because the employees response to using it is positive	9
Because it gives users benefit in adding to their technical skills and capabilities	11
Because it gives users benefit in adding to their skills in banking operations	12
Because it helps increase the job satisfaction for the employees	12
In improving the internal communications between employees	14
As a substitute for employing new workers	15
To increase personal reward as a result of working with it	15
Because it helps improve the job security for the employees	17

Table 8.6 is given to illustrate the management priority in terms of what they plan and expect to get out of the use of the IS. This supplements the picture which is further discussed in sub-section 8.3.2.4 when outlining the organisational priorities while evaluating their systems. The JFOs ranked the issue of improving the quality of the banking operations as number one. This demonstrates that they had an operational emphasis which gave rise to the second priority of requiring to increase the amount of work handled per employee. It is evident that the senior management of the JFOs considered that achieving the operational efficiency and employee effectiveness would lead to attaining stability and survival. The rest of the issues that appear in table 8.6 did not seem to be as equally important objectives to aim for since they turned out to be lower in rank.

8.3.1.3 Training and Senior Management Support

Training was not an issue of importance to the majority of the JFOs prior to the modernisation of the working procedures upon the introduction of the new technology. Nevertheless, all responding organisations were aware of the strategic importance of training. Nine JFOs reported having special departments for training but they were not dedicated to IS training. Their primary work was related to offering training on the banking operations which, in most cases, involved training on the use of the system. The training departments were established only a short time back due to the arising need. Three of the JFOs quoted figures for training allocations per annum which ranged between 60,000 and 200,000 JD.

In general, written standards and procedures for running the banking operations seemed to have been available in eleven organisations. However, training on the use of the system was mostly done by direct use and depended on the accumulated experience. In some JFOs users' responses indicated that they did not have direct access or were not guided to use the documentation for improved learning. This might explain why they were not sure of the availability of written standards and procedures of operations. In addition, the direct training offered by the IS department was not uniform and was not generally offered to all users.

The role of the senior management in advancing the automation varied amongst organisations. It was clear from the different responses that the top down decision making is the norm. For example, seven JFOs indicated that the GM is the prime decision-maker on all issues related to IS. The GM headed the IS committees in the majority of cases and was involved one way or another in the remaining cases. This implied that the senior management was directly involved in developing and modernising the IS. In the same vein, all responding organisations were of the opinion that the involvement of the IS department in strategic planning was important. However, it was difficult to gauge how this could have been pursued in practice. Table 8.7 provides a summary of the organisational determinants of the impacts of ISs in JFOs.

Table 8.7: The Organisational Determinants

- The recency of the introduction of the corporate IS
- How professional is the technical/organisational set up and the level of the hierarchical position of the technical manager
- The IS was considered synonymous to the banking system
- No specific demarcation of subcultures was possible
- In certain cases there were contradictory views and multiple meanings about the implementation of corporate plans between the senior and technical managements and the users
- Resistance to change upon introducing the new technology
- The interpretation was that in most cases there was no indication of having the right consolidated strategic positioning assessment (exploitation of strategic strengths)
- No well thought out plans for IS investments (more like in the line of it had to be done)
- No clear short-term or long-term strategic plan (business or IS) in the majority of cases
- The emphasis for the use of ISs was more operational than strategic
- Lack of corporate emphasis on the vital role of training
- The senior management commitment to design and development of the corporate IS
- Involvement of IS department in strategic planning
- The involvement of users in the design and development of the corporate IS
- The general satisfaction with the use and operations of the IS

8.3.2 Technical

The technical determinants include factors that are attributed to the technical details of the system or the people that are involved in providing the support to maintain the work of the system. The discussion here includes a review of the systems available in the JFOs, the quality of the work of ISs, the information systems staff in the JFOs and the practices of the evaluation of ISs in JFOs.

8.3.2.1 A Technical Overview of the Used ISs

Fifteen of the cases were banks and subsequently the products were almost identical. The difference is in banking specialised details related to loans and similar issues. The banks belonged to different categories according to the classification by the Central Bank of Jordan. One was an Islamic bank, which operated without resorting to charging a direct combined interest and had

different ways of investing deposits, and five were investment banks which were restricted in offering loans to particular qualified customers. In addition, all offered credit cards and some more than one type, but four did not have their own ATM card. There was no possibility to use ATM cards interchangeably between banks.

Table 8.8: Applications and their Availability

APPLICATIONS (SUB-SYSTEMS)	COMPLETE	INCOMPLETE	NOT AVAILABLE
Human Resource Management / Personnel	6	3	3
Electronic fund transfer (Via SWIFT)	8	0	4
Cash (Teller)	8	2	2
Deposits	10	2	0
Facilities and loans	7	4	1
Signatures' verification	10	2	0
Transfers	6	5	1
Letters of Credit (L/Cs)	4	5	3
Letters of guarantee (L/Gs)	7	3	2
Inter-Branch operations	7	4	1
Reporting system	6	6	0
Treasury and shares/bonds trading	6	6	0
Central accounting	8	2	2
Investments	4	3	5
Bills and installment guarantees	8	3	1

Organisations had varied technical capabilities. The range extends from a simple mini-computer with few terminals, to the relatively advanced that encompassed an IBM ES/9000, IBM/4381, IBM 4700 with token ring, Ethernet, Windows NT, Unix and Novell. The software also differed. One organisation was running COBOL-based applications. Some had a number of systems running simultaneously, a situation which was causing havoc, and a few were running ready made application packages with limited tailoring in-house.

All organisations had undergone one or more changes to their computing capabilities and two of the organisations were engaged in major overhaul of their existing ISs. None of the organisations had a fully integrated inter-branch on-line system. In the most advanced organisation, the integration covered most but not all branches. Organisations reported that there was still work to be completed

except for those that were established only a few years back, who were operating an almost completely new system. The technical managers were asked to mark the availability of a list comprising fifteen sub-systems in the same order as they appear in table 8.8. The question posed was 'to what extent is the following sub-systems fully available in your information system'. None reported that they have all fifteen sub-systems fully computerised. Those applications and their availability (complete, incomplete and not available) in the 12 banks that responded to these questions are illustrated in table 8.8.

Most of the banks have the 'deposits' as well as the 'signature verification' working. Besides, the 'cash', these applications are necessary for carrying out the basic operations in any banking system. In addition to banks that did not have an on-line working system and could not run those applications, other JFOs were developing these modules. A similar thing can be said about the remaining list of applications which were, in the majority of cases, under development.

Furthermore, eight organisations had a fully operational teller¹ system. Many sub-systems such as treasury and stock trading, investment and Letters of Credit were not automated even in organisations with relatively advanced systems. In certain cases, they had branch systems that handle daily transactions and the system would be interrogated about the customer being served. This was for cashing money, issuing a foreign currency cheque and so on. One has to note, however, that the majority of Jordanian banks are quite young.

8.3.2.2 The Quality of the Work of ISs

The information systems in Jordanian financial organisations were actually banking systems that have been introduced to improve the work in those organisations. Only the two largest banks said they had a bank database, besides details related to customer accounts. However, ten reported that the system provided them with all required reports. Two of the banks said they used a

¹ A bank teller is the person that deals with the customer directly for cashing and depositing, in addition to settling customer bills. It is indicative of an on-line system connected to the back office, as the teller needs to query the system for details significant to completing a customer transaction.

chargeout system for distributing IS department costs and a few reported a budget for the department. Some did not quote a figure for the IS budget, and others gave relatively high estimates. It could possibly be that they did not wish to speculate, whether for confidentiality or lack of information. Only one said that IS current budget was linked to revenues of the preceding year. They all consider the IS department as a cost centre for accounting purposes. Table 8.9 summarises the JFOs' responses, as given by the technical managers to corresponding questions that were discussed in this paragraph.

Table 8.9: JFOs Responses to Relevant Issues

Issue	Number of JFOs Agreeing
Having a database other than customer accounts	2
System provides all reports	10
Using a chargeout system of cost distribution	2
IS budget linked to previous year revenue	1
IS department is a cost centre	12

In general, JFOs considered that their ISs had a better than average relative response rate. The view was shared between the management and the users. This was clearly more evident in the organisations that had more advanced technical capabilities. A similar point can be made for the general qualities of the information provided by those systems. These included the comprehensiveness, accuracy and timeliness of information obtained from the system. However, the lack of feedback from users was quite obvious in certain cases when the management presented their IS as providing the best quality information which contradicted the views of the users within their organisations. One thing was common amongst the majority of the JFOs which was the reaction that the systems were effortless and easy to use. The technical management in return were of the opinion that the majority of the users understood the work and operations on the IS. In addition, the JFOs have geographically placed their IS departments in a convenient place which was accessible to the users in the respective organisations.

The systems used in JFOs were expandable to a varying degree. At least two were deficient as far as the expandability was concerned. This ties with the technical sophistication of the hardware and software of the available systems. The technical management who considered their systems sophisticated and expandable has also emphasised that this was compatible with the corporate philosophy. On the other hand, it is worth mentioning that some claimed that their ISs were completely equipped for all work requirements with full integration of applications. This was doubtful since the technical specifications conveyed a completely opposing message about the ISs in those organisations.

8.3.2.3 The Information Systems Staff in the JFOs

Certain characteristics related to the size of investment in IS and the size of the IS department varied drastically according to the size of organisation. One organisation had as few as 6 people in the IS department, while on the other end of the spectrum, there was an organisation that had 160 analysts, data entry staff, programmers and engineers. Investment ranged from 50,000 JD to a highest revealed figure of 3,300,000 JD. The number of technical staff was noticeably considered sufficient only in those organisations that had a relatively modern and advanced system. Therefore this was deemed a relevant determinant because it affected the quality of services offered to users. In addition, users had some doubts about the competence of IS staff in banking operations. The technical managers in those organisations expressed that they had no problem in assimilating the banking operations and that this posed no serious obstacle to giving the required technical support.

The organisations offered similar views on the issues of relations between users and IS staff, the quality of service offered by the IS staff, the technical competence of the IS professionals and the general systematic work of the IS department. It was almost always the case that the senior management looked favourably at those issues and considered them as punctual and according to plans. The technical management gave, what was interpreted as, more realistic conservative assessment because they were considered to be more in direct touch with the

users. However, the users have on average provided a better than average standard of evaluations related to the issues raised but never indicated the service was anything close to perfect.

8.3.2.4 Practices of the Evaluation of ISs in JFOs

The issue of evaluation was raised in the survey by a number of relevant questions directed to the senior management, the technical management and the users. They all considered evaluation important. However, JFOs distinguished between the evaluation of their ISs and the periodic checking and auditing, although this was assumed by some of those organisations as a kind of an evaluation of the system itself. The commonest used technique for evaluating investment, as marked by five of the participating JFOs, was the feasibility study. In one case it was Net Present Value, and in another it was the Internal Rate of Return.

As for the post implementation evaluation of the system, only two organisations reported that they made the evaluation. In one case, it was reported as not important because the system is up and running and customers did not complain so things must have been right. Those who said they were evaluating have reported distributing a questionnaire to internal users. This latter action was irregular and most of those who said they were carrying out evaluations had done it only once. The essence of those methods of evaluating ISs adopted by JFOs was based on relating the benefits to the operating costs. The expenses, as Neumann and Segev (1980) suggested, were interwoven with other corporate expenses incurred, and therefore it was impossible to carry out conventional cost benefit analysis or accurately assign a JD value to information.

The senior and technical managers were asked about the role of shareholders in making decisions related to investment in IS. The positive responses came from organisations where one or more of the senior managers were on the organisation's board of directors. In one case, the organisation had a major

shareholder bank that was represented by the chairman of the board of directors for that particular Jordanian financial organisation.

Table 8.10: Importance of the Different Factors to IS Evaluation

FACTOR	RANK
Achieving coordination of work between headquarters, offices and branches	1
Improving data integration and consolidation	2
Improving services offered to customers	3
Achieving organisational aims and objectives	3
Its compatibility and synergy with organisational requirements	5
Increasing work throughput	5
Contributing to gaining a competitive advantage	7
Increasing productivity of the operational units	8
Extent of meeting management needs to perform, monitor and control work	8
Helping in reducing costs	10
Achieving maximum return in proportion to the investment in the information system	10
Increasing customer satisfaction	10
Meeting the needs of the users	13
Assisting in Corporate planning	14
Reducing the need for the human resource in order to execute work	14
Improving the internal communications between employees	16
Direct increase in profitability as a result of using the information system	17

Questions related to the importance of certain factors for the evaluation of ISs were put to the users and senior managers in the respective organisations. Table 8.10 illustrates the ranking of the importance of those factors as reported by the responding organisations. This was worked out based on the individual organisational responses by calculating the weighted answers in order to rank the factors.

It is clearly indicated from table 8.10 that JFOs were seen as being realistic in placing the relevance to achieve co-ordination of work between headquarters, offices and branches as number one priority as to why they should evaluate their ISs. Therefore, the priority number two that naturally follows is to improve the integration and consolidation of data. This fits with the operational requirements of the bank to run its day to day business. However, it was unexpected that the

issue of the use of ISs to increase profitability was only ranked with the lowest priority when it came to assessing its significance to the evaluations of those information systems. The general aggregate preference for the remaining factors is shown in the table. Nevertheless, there was an inter-organisational variance in the order of setting preferences. This was referred to further when discussing the strategic issues of relevance resulting from the use of the systems in sub-section 8.3.1.2. Table 8.11 summarises the technical determinants of the impacts of ISs in JFOs.

Table 8.11: The Technical Determinants

- | |
|---|
| <ul style="list-style-type: none"> • The technical sophistication of the system's capabilities • The upgradability and expandability of the system • The relative closeness to having full on-line and inetr-branch operations • The completeness of the spectrum of banking applications available in the system • The range of reports that are potentially available • The general qualities of the information provided by the IS • The availability of sufficient IS staff to provide the required technical support • The technical and banking competence of IS staff • The regular evaluation of the IS operations • The importance of soliciting feedback from users |
|---|

8.3.3 Environmental

The oldest of the Jordanian financial organisations was founded in 1934 and the most recent was established in 1990. Many were financial companies that had converted to banks. Banks and financial companies are especially significant to the national economy. The government keeps tight controls which affect the banking system but not the internal work of ISs. The CBJ forced all banks to increase their capital to a minimum of 20 million JD. Banks have to regularly and periodically provide reports to the CBJ. ISs are vital to produce those reports in an accurate and timely manner. Banks have to keep 14 % of deposits with the CBJ as a precaution, without getting any interest on those amounts (not for religious reasons). This accounts for almost 2 % of total money return. Current interest paid by banks can reach 10 % and the lending interest charge is 13- 14 %. Once administrative expenses and the compulsory interest-free deposit in the CBJ are

deducted, the remaining profit is relatively low. These factors help explain the low annual profits of Jordanian banks. Therefore, the sheer thought of considering a causal relationship to explain variance in profitability (e.g. by calculating the ROI), as ascribed to use of IS, is implausible.

Table 8.12: The Environmental Determinants

- | |
|---|
| <ul style="list-style-type: none">• The constraining role of the CBJ• The restrictive role of carrying out investment/banking work in Jordan• The small size of the economy• The relatively large local and uneven competition• The political instability and regional turbulence |
|---|

For a small country with approximately 4.6 million inhabitants, Jordan has a large number of banks competing for limited opportunities. The share prices of those banks are continuously fluctuating. This is not a reflection of performance but more linked to political instability. Jordan had a major crisis during the late eighties when the Jordanian Dinar was devalued by 50 %. Many prefer deposits outside the country. In addition, as a Moslem country (95% of the population), a large number of people prefer to deal with an Islamic bank². This contributes to the fact that banks do not face equal competition, and this may explain the short-term orientation trends towards focusing on short-term planning. Table 8.12 summarises the environmental determinants of the impacts of ISs in JFOs.

8.4 Summary

The analysis of the survey provided insight into the role and value of ISs in JFOs. The chapter included a presentation of the strategic and functional impacts as well as the determinants of the impacts of ISs. Since the strategic impacts were limited, the focus was more on the functional impacts that were discussed at greater length. This included outlining the general organisational impacts, direct impacts on the individual with additional emphasis on the issue of user

² On 1st. Feb. 1998, a second Islamic bank was opened to the public. It came as a result of a bankruptcy buy out of a commercial bank (originally excluded from population).

satisfaction and also structural impacts. As for the determinants, they were presented as organisational, technical and environmental. All aspects that were considered relevant to provide a richer picture about the phenomenon of the use of ISs in JFOs were included.

Similar to part of the presentation of the organographies in chapter 7, the theoretical basis was also used in chapter 8 to guide the order of the presentation. Due to the nature of the survey, as a research method based on questionnaires, the headings of the sub-sections were directly related to the data collected so as to be able to submit a coherent and meaningful discussion based on actual responses from participants. The analysis has mostly depended on the answers of respondents as given in the returned questionnaires, as well as the relevant secondary data.

As the first in the concluding part IV of the thesis, the following chapter 9 presents the discussion and summary of the findings which is intended to help establish the contribution of the research as will be presented in a summarised form in chapter 10.

PART IV
DISCUSSION AND CONCLUSIONS

Chapter Nine

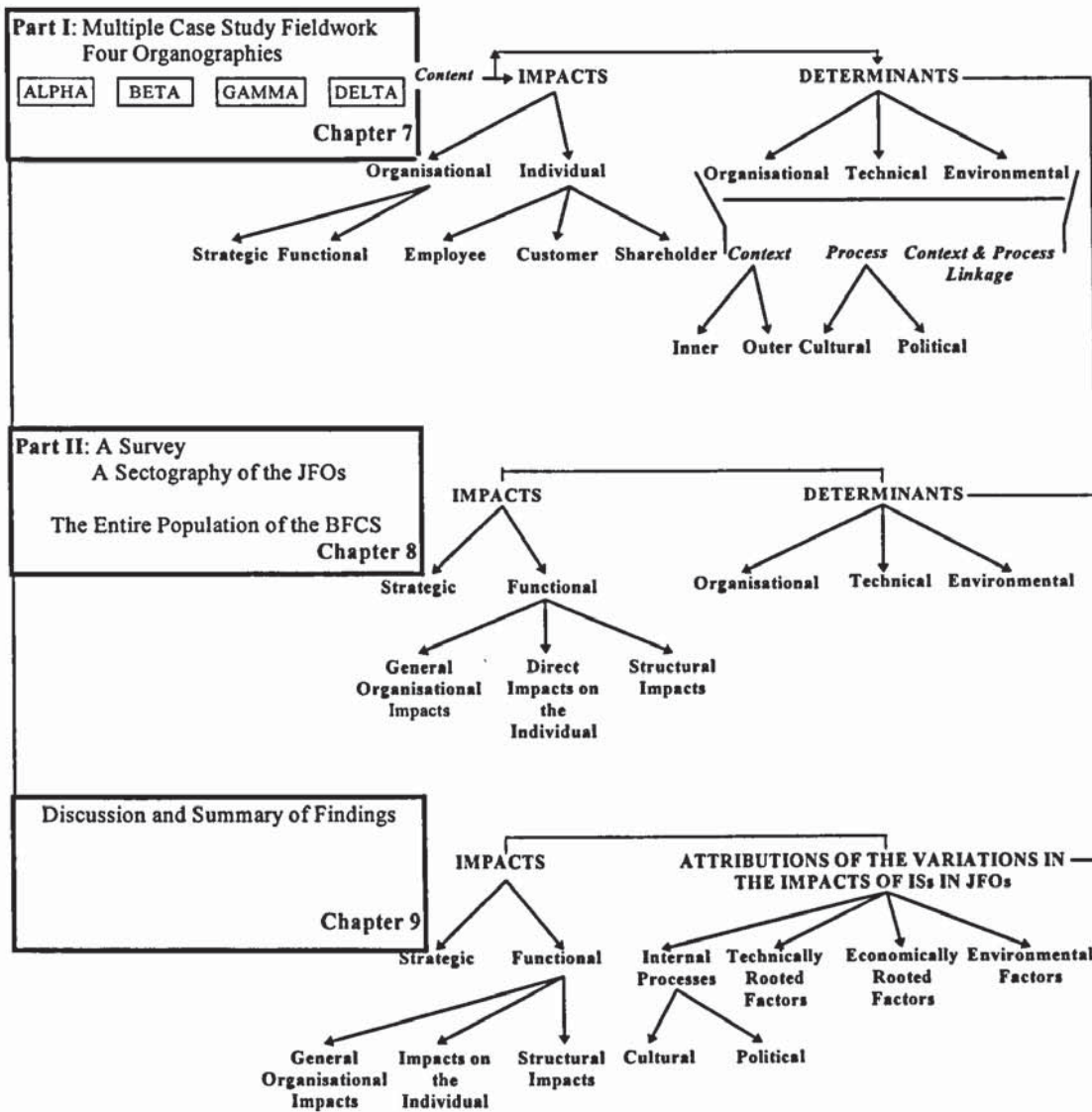
DISCUSSION AND SUMMARY OF FINDINGS

9.1 Introduction

In line with the literature review presented throughout chapters 3 and 4, one notices that the previous research, despite being quite extensive, is still not focused. The knowledge is accumulating but there is a lot of time and effort being wasted due to the non-intensive research. As expressed earlier in chapter 3, the IS/IT field is multidisciplinary borrowing from many influencing disciplines which enriches the field but also is a cause for possibly distracting the novice researcher (new entrant).

Regarding the topic of this research the problem was seen as multifold. Firstly, the particular definitional problem as related to the evaluation and assessment of impacts or effects of ISs. It could also be said that a simple solution is to aim for gauging the resultant effects of using such systems but it is easier said than done. The problem of finding the worth of those systems is still demanding an acceptably workable and practicable answer. Secondly, the question of explaining the effects and analysing the situation is still an area that lacks proper explication. In addition to being piecemeal in nature, the literature search has confirmed what Walsham (1993) observed about the coverage of previous work on ISs. Walsham noted that the concentration was mainly on the content with little emphasis on the process and context of organisational change. Thirdly, the question of paradigm applicability as the field abounds with examples that apply different paradigms and even many diverse versions and interpretations belonging to the same paradigm. The researcher concurs with Legge's (1984) view in realising the evaluator's disillusionment, in practical and epistemological terms, when using positivistic approaches. A researcher-interpreted contextual rich picture analysis was considered a more appropriate choice and therefore the contention, as presented throughout the thesis, is interpretatively inclined.

Figure 9.1: Linking the Analyses and the Discussion to the Theoretical Basis



Chapters 7 and 8 revealed that the impacts of ISs in JFOs were not uniform. The multiple case study part was more illustrative of this point. It became evidently clear that the *classic* impacts, as typically reported in the IS literature, were also found in most of the JFOs. However, the intensity and depth of impacts varied between the different organisations. This was interpreted as being linked to a number of factors that were discussed for the four cases of part I, as shown in figure 9.1, under content (determinants), and the context and process. As for the survey part of the research, the attributions of the variations of the impacts were discussed in the determinants section 8.3 which covered organisational, technical and environmental factors.

Figure 9.1 therefore serves to demonstrate the theoretical linkage between the discussion, analyses and the research problem. This chapter presents the discussion of the research in order to be able to establish the contribution of the thesis in relation to the originally intended objectives. Section 9.2 presents the impacts which are presented in, what is considered to be, the natural order of importance. The discussion covers the functional impacts first and this is followed by a presentation of the strategic impacts. On the other hand, section 9.3 outlines the attributions in accordance with the issues raised in the second research question. These include the internal processes, the technically and economically rooted factors as well as the additional separate coverage of the environmental factors. Sections 9.4 and 9.5 provide a summary of the key findings of the research which serves as a prelude to introducing the contributions of the research in the following chapter 10. Chapter 9 is concluded with a chapter summary in section 9.6.

Besides the structural issues related to size and financial positions, the difference in the impacts of ISs could be attributed to other organisational and environmental determinants as will be discussed in section 9.3. The following section covers the general impacts of ISs in JFOs. It includes a review of the strategic and functional uses and discusses the strategic and business tasks as well as the business/IS strategic fit.

9.2 The Impacts of ISs

The organisational framework, which was outlined in chapter 5 (figure 5.2), showed technology as one of the four dimensions and is considered here to be synonymous with ISs because they constitute the core organisational technology in banks. Through their use, ISs interact and affect the other dimensions that make up the three remaining vertices of the diamond shaped organisational framework. Naturally, the ultimate question related to the use of technology by individuals and organisations is not, as Torkzadeh and Doll (1999) explained, how the technology is designed or regarded but rather how it impacts.

The strategic and functional uses of ISs are considered inseparable. Wilson (1990: p. 85) suggested that 'An IT application is strategic if it fundamentally affects an organisation's functionality'. On the other hand, if a system helps reduce cost and improve processing speed, it indicates an improvement to efficiency but does not necessarily imply that it has affected the strategic functionality of the organisation. The following sub-sections 9.2.1 and 9.2.2 discuss the functional and strategic impacts of ISs respectively as were found in JFOs. Sub-section 9.2.3 conflates the strategic and business tasks and serves as a basis to tackling the issue of business/IS strategic fit that is dealt with in sub-section 9.2.4.

9.2.1 Functional

The following presentation of the functional impacts of the ISs is made under the headings of general organisational impacts, impacts on the individual and structural impacts.

9.2.1.1 General Organisational Impacts

As discussed for each of the cases of part I in different sub-sections of chapter 7 (7.2.2, 7.3.2, 7.4.2 and 7.5.2) and also as pursued further for the BFCS covering all JFOs in section 8.2, the systems used in the different Jordanian financial organisations were ideally suited to automating the routine transactions. They were account and product-based systems and were not readily transferable to work as customer-based systems. The capabilities varied and the transfer could be achieved to a limited extent in one of the organisations but not the others. In some cases, like Beta for example, it was possible in some branches but not in all due to lack of technical compatibility.

The ISs were reported as useful tools and query systems in all JFOs. Since their strategic use, as will be discussed in sub-section 9.2.2, was considered to be limited, this was compensated by the functional dependency on those systems. The use of the systems has resulted in improved productivity of operations by reducing the time for processing transactions, increasing the processing volumes, enhancing quality of service and providing the facility to offer new services. In

this process, the automation of applications saved human hours that could be used to execute other tasks. In addition, the systems have improved the business co-ordination and execution between departments and branches. Therefore, it had made it possible to centralise control and decentralise the execution of activities. This is contrary to what Robey (1981) and Bjørn-Andersen et al (1986) reported about the decentralisation of decision making in their researched organisations. On the other hand, Wijnhoven and Wassenaar (1990) found that ISs were useful in realising more centralisation.

The degree of sophistication of the system seemed to be indicated by how much of the back office operations were performed in the front office or by how much was *the fragmentation of jobs between the front and back offices*. The ideal case is executing 100 percent of the operations in the front office while the customer is present. One senior manager stated that their strategic/operational aim could be expressed by the plan to reduce back office work to at least 20 percent, while the front office operations would make up the remaining 80 percent of the banking operations. This is actually a good measure to compare, in particular, the four cases of part I. It should be noted that some of those banks increased the dependence on the front office operations by simultaneously carrying out the auxiliary paper work while working the on line system. Based on the researcher's interpretation of reported management estimates, table 9.1 shows percentages of back office and front office operations in the four cases. The percentages indicate that Delta (section 7.5) had the most complete system and this was followed by Alpha (section 7.2). They would probably argue that their system were facilitating the execution of more work in the front offices but in reality this was not accurate. Some of the back office operations were physically brought to the front office but the automation of front office operations was still lagging behind. The configuration in Gamma (section 7.4) depended on the use of two systems and the higher degree of automation was noticeable in both. The problem was with work integration amongst departments and branches, which still needs time. Beta (section 7.3) had a number of systems running simultaneously and the

actual automation of front office operations was estimated at 20 % of the total banking operations carried out.

Table 9.1: Percentages of Back and Front Office Operations in Part I Cases

CASE	BACK OFFICE	FRONT OFFICE
ALPHA	45	55
BETA	80	20
GAMMA	60	40
DELTA	20	80

In general, the JFOs were, to a varying degree, similar in terms of task, structure and environment. The banks were made up of a number of internal cost centres (branches and certain head office departments). In spite of the resemblance in appearance of those banks, they each had their individualistic characteristics which were clear in the four banks of part I. There was no cost accounting in those cases because of the high cost involved. Branches had to bear the cost of their own hardware and they were not charged with the cost of the central system (no charging-out). IS departments were generally cost centres in the JFOs and the cost involved appeared as assets and running expenses in the annual budgets. Some of the JFOs were using their ISs for marketing studies and in general, the contribution of ISs to profitability was indirect. In one sense it was increased by virtue of not having factors that reduce it. This includes issues like accurate interest calculations and thorough evaluations of loans.

9.2.1.2 Impacts on the Individual

Olson (1982) explained, the challenges facing management in the future will be related to the utilisation of the vast potential offered by computers and communication technologies, not only to increase organisational productivity but also to improve the quality of the working life of employees. A general conclusion was that the JFOs were still a long way from achieving the goal of

focusing on the improvement of the working conditions for their employees. It did not seem to be a corporate priority for those organisations.

In general, the employees of the JFOs were considered to be polychronic as found from the interviews carried out during part I. The experience showed that they were willing to answer all questions on all areas if they, in the first place, agreed to talk. There was no specialisation and no clear role or job description. The researcher realised how crucially important it was to ask the right questions to the right persons at the right time.

There was limited effect on isolating individuals by reducing their interaction and internal communication as a direct result of the use of the system. The responsibilities were delineated in greater details and immediate control meant added pressure on the employee as spotting mistakes became easier. The day-to-day banking work on the system did not actually demand high aptitude or exceptional capabilities in the ordinary user of the system. This could be taken to imply that the systems had a limited deskilling effect. A corollary effect was that some employees felt a reduced sense of security due to ease of substitution as it practically meant losing the head advantage and competing with newcomers to the field who were adept in the use of technology. On the other hand, it can also be pointed that the system had some skilling effect and consequently, in the case of the banks with integrated systems, managed to increase the general satisfaction of the users. In addition, on the level of the individual worker the system has enlarged the role of the cashier in those banks with on-line systems.

On the other hand, one may argue that ISs gave limited help in revealing the hidden talents of employees and providing better chances for skilled employees to advance up the hierarchy. The on-the-job performance and productivity have improved as a direct result of the use of the systems. ISs have also freed time for employees at the different organisational levels which could be afforded to carry out other useful and needed tasks.

In general, the system has refined the work of managers and improved its quality. The role of middle managers was found to have become more important because they were needed as mediators between their subordinates and the senior management. As discussed previously, in certain cases the middle management would be by-passed and the senior management would be in direct touch with the operational employees. The branch managers had more time to do marketing work which resulted in better customer satisfaction and in some cases even more customers.

There was a general interpretation that the employee's satisfaction was enhanced due to ease of use and not having to work anti-social hours as was the case prior to automation. However, the internal communication between employees was impacted because the work had mostly to be carried out via the system. It is worth noting that there was no general tendency to empower employees. This ties in with the principle of managing conservatively by having tight control and security on all financial dealings that could jeopardise the financial strength of the bank.

Customers were mostly affected by the improved quality of services (the counter dealings and in some cases by having access to electronic cards). They have noticed an improvement in the speed of executing transactions and the accuracy demonstrated in their regular statements of their accounts. The impact on the shareholders, as perceived by the employees of the JFOs, was interpreted as limited because the use of ISs was transparent to them except through what they were told during the annual general meeting. The JFOs reported that the shareholders would be more interested in the end of year figures and specifically in receiving their share of the dividends. It has to be added here that in cases where major shareholders were involved in the daily management of the banks the picture would be different. The decisions would involve the shareholders who could exert pressure to influence investment decisions and future plans for the corporate information system.

9.2.1.3 Structural Impacts

Jordanian organisations operate with a high degree of uncertainty in the environment. This influences the level at which decisions are made. In general, the JFOs had a hierarchical structure of power and the co-ordinating mechanism was the means of the direct supervision. Both parts of the research confirmed that ISs helped improve the co-ordination of work but had little effect on formalisation. The overall control of decision making related to the business and IS affairs was centralised in accordance with a top-down style of management. In the majority of cases, the IS helped recentralise control and decentralise work. The JFOs seemed to agree on this principle. A middle manager in Gamma was pointing to the aspect of centralisation in organisations when saying:

‘Centralisation is a management decision and has nothing to do with the system. If the decision was to centralise, the management would use the system to their favour for serving such policies and not the opposite. Systems are only tools’

The official structure was not adhered to all the time. Some employees, whether belonging to the interviewees or even those who filled a questionnaire in the survey part (they were specifically asked who their direct superior was), were quite unsure about their exact 'boss' which hinted that the organisational hierarchy of command and control was not clear. This is not system related but rather management related or cultural. The system helped reduce the levels or layers of work (depending on how much of the back office work was transferred to the front office) but that was below the level of middle management who had an additionally strengthened role to play. Furthermore, the need for having an accounting department became less important as the emphasis was on the finance department. Whether the IS department gained power or not has depended on the seniority of its management. Therefore, it can also be stated here that there was a reduction in the number of departments.

Besides allowing for some increase to the span of control, the advent and use of ISs has had an impact on the administrative intensity (number of individuals in administration versus support roles). In general, there was a slight reduction in the number of employees but in the majority of cases, it was not possible to

quantify due to employee relocation or redeployment in other departments or newly established branches.

9.2.2 Strategic

The Jordanian banks had varying conservative policies concerning money lending. This could be linked to their small sizes, the large number of competing banks in a relatively small local market and the stringent rules and regulations imposed by the CBJ following one infamous bankruptcy of an otherwise relatively successful bank that was one of the top three of the best performing Jordanian banks.

As discussed in sub-section 8.2.1, the ISs were generally seen to be useful in constraining employment and helping maintain the stability and survival of organisations. The JFOs had different perspectives on the actual potential of their systems and how to actually make use of them. Therefore, the strategic application of ISs was different. Senior management had the general awareness about the strategic role but were not capable of enforcing strategic plans by virtue of having determinants that restrict their margin for mobility. They were generally expenditure conscious rather than strategic planning warriors. The general attitude that reflects a prevalent strategic thinking mode can be summed up in a statement made by one senior manager who said 'the main strategic aim is to have a good system at a reasonable price'.

How did those organisations show up? This was clearer in the multiple case studies part of the research. For example, in Alpha, one senior manager expressed this as:

'we show through the dealings on counters, the advertisement, granting facilities and better offers'

On the other hand, Beta could not cut out a modern image except for appealing to the public as the bank of the people. Gamma were keen to show up as a true modern conservative Jordanian bank while Delta was presented as a modern bank with a distinctive system and a progressively modern management.

The general awareness in Beta could not drive strategic achievements because of the existing limitations. They were betting on the new system which was seen to have the latent potential for effecting strategic change. Alpha had a comfortably working system but was not willing to invest for additional potential that may push towards a strategic dependency on opportunities which could be made possible through having a well equipped system. Gamma had working systems but efforts to advance were encumbered by the merger. Both working systems had potential but the result can not be seen for at least the next few years because of joining forces and capabilities of the two banks that have merged. Similarly, the management was progressive and counting on the use of their ISs for attaining better competitive positions. Delta was the only case that appeared to have the plan and the needed system. In addition, its management was very much involved in the role and use of ISs for the present and future times.

In general, there was little evidence that ISs have created any sustainable competitive advantage for any of Alpha, Beta and Gamma or for the participating JFOs in part II, except Delta, although it was seen as a strategic necessity. The case of Delta was different because the senior management considered the large investment in IS as a strategic priority which might provide a long-term competitive advantage. The work in all those cases depended on ISs for the day-to-day running of the business. Even the use of ATMs and other plastic cards did not help in achieving a competitive advantage because of the short-lived effect due to the ease of technology transfer or rather until the other banks can offer such services. In addition, the plastic cards were not considered as an important issue in selecting the bank, as customers were more concerned with other factors of convenience and benefit.

The ISs were helpful in providing more accurate details that assisted in speeding up an efficient process of decision making. One may also conjecture that the use of those information systems had improved the effectiveness, in terms of improving management in those banks, and aided in increasing innovativeness by having improved products and services.

9.2.3 Strategic Tasks and Business Tasks

The expected benefits from the use of ISs will accrue as a result of consolidated planning and hard work. Tyre and Orlikowski (1993: p. 13) stressed that the full advantages of those advanced technologies can not be purchased off the shelf, 'they are won by patiently and carefully tailoring the technology to fit a given firm's organisational and strategic context'. Some researchers have argued that although ISs are strategic business tools which are essential for the corporate strategy, they do not guarantee a sustainable competitive advantage (Clemons and Row, 1987; Clemons, 1991). Other researchers have attempted to measure the strategic contribution of ISs (Sethi and Kling, 1994). The research found that the majority of Jordanian banks operated without resorting to a fully implementable strategic plan. They were driven by the need to improve earning figures on a yearly basis but apart from a few of them, the competitive role of ISs as a possible rivalry weapon was not enforced. This also applies to the IS strategy. It was evident from customers' responses that banks compete, not necessarily for all customers, but for that slice of High Net-Worth (HNW). Those HNWs value all facilities that provide more convenience. They require ATM and VISA cards, private banking and other services. Banks' responses to this are not uniform and strategically dependent on top management's appreciation of the use of ISs for achieving a competitive advantage. It is an aspiration and the hidden agenda for a number of them is to get those HNW customers rather than working under an expansionist strategy.

It follows that Jordanian banks were keen to maintain their systems operating without major disrupting problems. However, further investments or improvements were left to the time and were budgeted in the preceding year. The general philosophy was to keep investment to the minimum. The limited number of those banks that were in a position to plan proactively were motivated by a concern to maintain the systems for as long as possible rather than attracting customers by having the latest technology. In that sense, ISs were work enablers and not work drivers. This is similar to what was reported by Powell and Dent-Micallef (1997) who concluded that although IT was a useful leverage or enabler,

it did not generate sustainable performance advantages. As for the strategic planning, contrary to Leavitt's and Whisler's (1958) first prognostication, there was no change in terms of who does the planning. However, there was recentralisation of control and a limited number of people were involved in facilitating the planning and innovative work which was in line with Leavitt's and Whisler's second prognostication. The reorganisation of managerial posts affected the operational level more than the level of middle management. In addition, as top-down organisations and contrary to what Leavitt and Whisler predicted, there was no clear line demarcating the top management and middle management. Again, this was organisation dependent. In actual fact, only the role of top management was clear but not all managerial positions.

Gauging IS impact was problematic. Organisations reported that IS was essential for profitability, but could not be identified as directly contributing a proportion of it. Some researchers (e.g. Yap and Walsham, 1986; Wilson, 1993) have reported a similar finding that there was no evidence to support that computers increased profitability. Emphasis was placed on the functional use rather than the strategic one. The ISs were considered tools or work enablers. Organisations lacked long term planning, engendered by working in turbulent and uncertain conditions. There was a serious need for having a fully functional system in order to keep the business running. However, this did not warrant or result in a continuous increase of investment in IS. New modifications were intended to add to the existing capacity. Some of the JFOs were pursuing a kind of contingency planning. The actions of rivalries and competition were not the driver and motivation. This is being realised more by the day, as there exists a large number of banks for a small country like Jordan.

In general, the contribution of IS was considered to be efficiency related (Bakos, 1987). It affects the speed of operations and quality of service. In addition, it is coordinational as it facilitates the relations among the organisational units (Wang, 1997). Besides speed, cost and quality, other reported benefits were intangible. ISs had limited impact on span of control, hierarchy and lateral communications.

They have increased speed of decision-making but did not add to employees' job satisfaction. The centralised control remained dominant and there was little effect on organisational stability or power structure.

The information systems therefore, were useful in their ability to outperform the workers because of their limited capabilities. They have improved the activities and processes of the business with limited change to the nature of those activities and the business of those banks. Most notably, the positive impacts outweighed the non-beneficial side effects. Zuboff (1985) explained that the choice of organisations to emphasise and exploit the 'automating' or 'informating' potential of the technology plays a central role in determining the organisational consequences of technological change. This is because the choice of emphasis is strategic and derives from the management perception of the potential contribution of technology. On the other hand, Orlikowski (1992) argued for the constituted and constitutive roles of technology in what she referred to as the *duality of technology*. It was evident that the emphasis in the JFOs was placed on automating working activities and the 'informating' was the unintended and undermanaged consequence of the automation. Therefore, the impacts were automation related and helped reduce time taken to carry out tasks, ordering and co-ordinating operations and executing complex jobs with fewer employees.

9.2.4 Business/ IS Strategic Fit

The concept of aligning business strategy and IS strategy arose in the West because of the realisation of organisations that their systems did support the business strategy (Bensaou and Earl, 1998). Bensaou and Earl explained that in countries outside the Western World like Japan, IT was seen as part of a fully integrated picture and not something special, different and problematic. They considered that the Japanese companies were rarely seen to experience the IT problems that were common in the West. According to Chan and Huff (1993), organisations typically achieve strategic alignment as the third stage following awareness and integration. The JFOs are seen to have passed the stage of awareness and are in the stage of integration. This implies that they accept the

need for meshing business plans with those of the IS. The JFOs are trying to develop business plans and IS plans simultaneously and are still to attain the third stage of the strategic alignment that involves integrating IS with the organisational fundamental strategies and core competencies.

JFOs lacked properly defined business and IS strategies. This could be attributed to lacking a well-considered vision, in the first instance, for running those banks. It follows that, except in the case of Delta, there was no indication of the existence of any strategic fit or alignment between the business and IS strategies. Whatever plans they had were ideas in the minds of the few key persons and were not properly operationalised. In Delta, the senior management had articulated a vision of how the bank could use the IS to meet the challenges and also had general strategic guidelines for running the business. The IS was used to serve the purpose of executing the business strategy. This was supported by the close involvement of the management in the minute details of the work of the system and the arising needs for expansion and modification. A senior manager in one of the four cases of part I pointed to an important global issue regarding business strategy, IS strategy and the strategic fit in Jordanian banks and said:

‘I don’t think local banks have corporate strategies whether short term, medium or long term. I think the same applies for timed objectives and development and also the use of technology but to what extent we have a one-year or five-year plan is not clear. It varies between banks’

In summary, it was interpreted that there was no strategic fit or alignment between the business strategy and the IS strategy in the majority of the JFOs due to a combination of short-termism, Sheikhocentric (*top-down*) style of management. This will be referred to further while discussing the cultural and political factors that play a great part in explaining the attributions of the variations in the impacts of ISs in sub-section 9.3.1. Sohal and Ng (1998) reported a similar finding about the lack of a strategic fit when researching 530 organisations in Australia. However, they noted that the non-strategic fit was amongst organisations that they considered were improperly using ISs. In fact, in the case of the JFOs, it was evident that information systems were not used as strategic tools at all except for

possibly providing future potential opportunities due to having an installed base such as in the case of Delta. In general, the strategic role of ISs was limited to reporting the business activities and their forecasting capacities were under-utilised because the priorities were directed towards the day-to-day running of the business.

Because of their contribution to the national economy and due to the local competition, JFOs need to be leaders in drawing strategies and implementing them. More emphasis needs to be placed on the importance of having a fairly long term IS strategy. These organisations have to realise that whenever possible they should seek to prepare long term plans especially when the advancing technology is a crucial factor to reckon with. Maintaining the current system is vital but looking ahead for future needs is of primary importance. It is also important that those organisations reconsider the use of IS for attaining a competitive advantage. This is part of a long term planning mechanism to assure their future profitability and survivability. Therefore, JFOs must have their fully translatable and executable corporate strategies that integrate with the IS strategy. The senior management needs to treat all dimensions of change (technical, organisational and people) as interlinked factors that have to be managed simultaneously.

As a matter of fact, seeking profitability may be temporarily fulfilled but does not guarantee survival in difficult circumstances. The development of such strategies involves change and therefore requires the commitment of the top management. In addition, the preparation should involve all those who will be affected by the resulting plans and policies. The idea behind this is to have the attitudes and understanding as needed for a shared corporate vision which will in turn facilitate the implementation of the plans and policies.

JFOs could do well to start by re-evaluating their strategies while noting what the competitors are doing. It is vital to account not only for the direct impact on the business but also for other developments in the wider environment in which

they operate. They also have to keep abreast of developments and look ahead to the future as to what kind of technology might emerge and how to possibly accommodate it. This will help them rethink their need for information to support the strategy and consequently decide on the level of required technology.

9.3 The Attributions of the Variations in the Impacts

As mentioned in the introduction to this chapter, the analysis of part I, as presented in chapter 7, and that of part II which was presented in chapter 8 have indicated that there was a difference between impacts in those organisations. Most of the JFOs were found to be working with similar banking procedures and practices like their Western counterparts. Generally, the information systems used in the JFOs were not, what one might call, the state of the art systems. Organisational, technical and environmental determinants were restricting creativity and innovativeness related to ISs, rather than pushing them forward to new frontiers. The size and objectives of those organisations were mitigating factors reducing impacts. Furthermore, the lack of integration in the database, comprehensiveness of use, system integration and technical capabilities inhibited effective impacts. This can also be said about a number of other factors like top management involvement, training of staff and the recency of operating most of ISs in the JFOs.

The effect of the processes of change (actions, reactions and interactions that accompanied the change due to the introduction and use of ISs) are discussed in the following sub-section 9.3.1. However, the internal business processes had little effect since the organisation of work in banks was very similar. Those banks were actually run as function-based and not process-based firms. From the smallest to the largest they were hardly different in the broad definition of their work and products. Therefore, it can be said that there was no evidence to attribute those impacts, to a great extent, to the internal business processes involved in running the business.

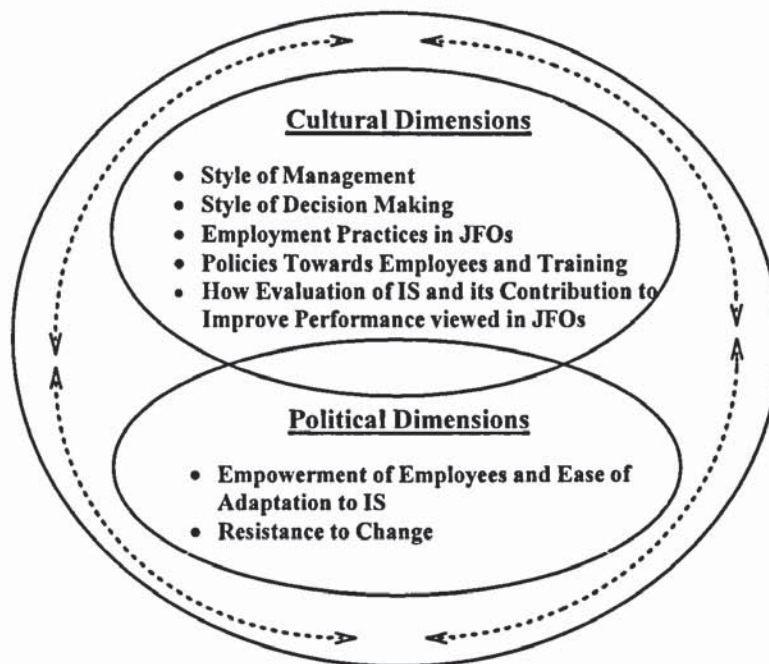
The researcher contends that the variations in the impacts of ISs could be mostly attributed to cultural and political factors as well as some economically and technically rooted factors and also other factors in the outer context. In order to avoid repetition and in line with the wording of the research question, as initially given in section 1.3, the following sub-sections will briefly summarise the impacts' attributions under what is considered the four most appropriate and relevant headings namely; internal processes: cultural and political considerations, technically rooted factors, economically rooted factors and environmental factors.

9.3.1 Internal Processes: Cultural and Political Considerations

Goodman and Green (1992) discussed computing in the Middle East and explained that the overall acceptability and value of such technologies was still ambiguous. In addition, Straub (1994) noted that cultural effects have an important role in the predisposition and selection of electronic communications media. Similarly, other researchers have emphasised the role of culture in the different stages of the adoption of innovation (e.g. Robey and Rodriguez, 1989; Robey and Azevedo, 1994; Barrett and Walsham, 1995). The role and value of ISs in the JFOs were influenced by the internal cultural and political factors. These are important considerations for explaining the attribution of impacts. For instance, it can in general be argued that organisations with climates that are conducive to productivity coupled with the appropriate corporate cultures have, in principle, the prerequisites for productivity improvement. Banks have their information networks which are redefined upon the introduction of information systems and the social interactions change accordingly.

The following presentation will cover the cultural and political factors under two separate sub-headings respectively. In addition, in order to assist in giving further understanding of the coverage, figure 9.2 illustrates the analytical dimensions for the internal processes as will be discussed under the cultural factors.

Figure 9.2: The Analytical Dimensions for the Internal Processes



9.3.1.1 Cultural Factors

While discussing the successful application of Group Support Systems, Tan et al (1995) argued that theories grounded in a particular culture do not necessarily apply to other cultures. They contended that IS theories and research are influenced by national cultures. This in turn, with a guiding set of values, influences the possibly unique ways of doing business. Similarly, Cooper (1994: p. 27) raised the importance of evaluating cultural conflicts when contemplating the introduction of IT-facilitated change and concluded that 'different MIS capabilities are more in accord with values and assumptions underlying some cultures rather than others'.

In general, cultures differ in behavioural norms and expectations. As discussed in chapter 2, the Jordanian culture is perceived to exhibit a high degree of power distance and also of uncertainty avoidance which is linked to the prevalent short-term planning. In addition, the Jordanian national culture is considered to be inclined towards exhibiting feminist characteristics and is more oriented towards having an individualist tendency. It provides a strong sense of social hierarchy

and high respect for authority which, in certain cases, is demonstrated by a blind obedience to superiors. The culture emphasises the relationships and commitments amongst friends and relatives and the issue of 'saving face' is of paramount importance. Based on the interviews of part I, there was empirically supported evidence that customers come into certain banks because of close personal contacts. The internal endorser of a customer transaction has to follow it up because it might back fire on him. He is not supposed to introduce customers without credibility. It is also not good for the customer, within such a shared society (the relevant group of social contacts), to disgrace whoever has tried to do him the favour.

The importance of improving the efficiency of services offered to customers was evidenced in this research. JFOs might do well to rethink the nature of the bank-customer interactions. Ballantine et al (1998) reported that the pressure from customers and the corporate emphasis on efficiency were the primary drivers for investing in ISs. In general, the hypothetical aims of the management of organisations could be summarised as:

- 1- Eliminate layers of unnecessary operational and middle managers.
- 2- Increasing efficiency of work on the individual and organisational levels.
- 3- Improve customer services.

In reality, these aims could not be achieved without having the right corporate culture. Only a few of the JFOs exhibited signs of harbouring their own corporate cultures. The majority of those organisations did not have a mission statement for example. Some senior managements distanced themselves from IS life cycle stages, albeit having the CEO decide every single issue related to IS. Baets (1996) made the awareness of managers about banking activities and also the interaction of the different aspects of strategy a pre-condition for success. Those considered as having a successful management and a clearer corporate culture paid more attention to training users.

The most prominent factor that may influence culture is the management and their philosophy of running the organisation. This in turn involves a number of interrelated aspects which include the style of management, style of corporate decision making, employment practices in JFOs, policies towards employees and training and how is evaluation of IS and its contribution to improve performance viewed in JFOs. These chosen dimensions were selected as elements of a framework for analysing the issue of the cultural specificity of the impacts of ISs.

Style of management

As mentioned earlier at the beginning of this sub-section, the different styles and goals of their management naturally influence the corporate cultures of local Jordanian organisations. For example, some resorted to an authoritarian style that militated against having shared goals. On the other hand, other styles of management were based on seeking consensus of subordinates and thereby encouraging a participative manner of running the work in rather democratic or paternalistic styles. A third kind is the remote management which puts up barriers between itself and the employees, and is unlikely to encourage the adoption of corporate shared goals. The management style and goals therefore have paramount roles in advancing organisations.

The style of management was found to be the most influential factor in orchestrating and maintaining the corporate culture. The management was expected to carry out strategic business and IS planning and conversely, the lack of such planning could be directly attributed to the particular style of management. Therefore, the whole outlook to the investment in IS and the use of IS thereafter is affected. The CEO can be considered as the driving force in organisations. It can be argued that in order to have a sales-driven bank one need to have a sales-minded CEO behind it.

In general, JFOs did not have what one might call a democratic style of management. The styles were mostly variations of the autocratic type with common characteristics that are similar to a Bedoucracy or Sheikhocracy (these

terms are discussed in details later in this sub-section under the heading of the style of corporate decision making) describing a one man role and his inner circle. The degree of democratisation was limited to a general consultation with the employees about ways to improve work. However, the tendency was to have a centralised command and control. An assertive management with democratically inclined style was more conducive to the realisation of positive IS impacts.

Furthermore, some managements were keen to create a culture that calls for allegiance to the organisation. This also meant that other subcultures had to be brought in line with this policy, thereby pushing the work to be orientated towards what was considered to be beneficial to the organisation. Other managements encouraged a kind of separation between subcultures. This could result from, for example, encouraging the use of the different labels 'IT user' and 'IT specialist' which actually helps encourage creating two subcultures within the same organisation (Bensaou and Earl, 1998). The management philosophy is reflected in how the organisation is managed and in the concepts embodied in the general business activities, policies and procedures. The employees need to be fully aware of the presence of this management philosophy because they are involved in its realisation. The researcher interpreted that this was an uncovered crucial gap which JFOs were not covering properly.

In addition, there are other qualities in the management of organisations that make a difference in the realisation of the full impacts of those ISs or may otherwise impede the implementation and appropriation of benefits. For example, the senior management knowledge about technology with foresight and planning and the need to face the increasing levels of fragmentation accompanying the introduction of the technology. This was found a distinguishing factor between the different JFOs. Although the GMs in some of those organisations were the sole decision-maker on all issues related to IS, their actual involvement in system's affairs was quite limited. On the other hand there were other GMs who took extended interest in the work of the IS department. This interest was not seen as personal but rather appreciative of the vital and

dependable role that the IS department plays in managing and maintaining the corporate IS. Needless to add that the organisations with such active-participating GMs were found to be markedly better performers.

The JFOs differed in the degree of implementation of a management philosophy and therefore in their corporate cultures, and the characters of those organisations were evidently different. This was clearer in the cases of part I of the research. Delta was seen as the only case that placed serious emphasis on the training of employees for the purpose of translating the management philosophy into behavioural measures that would be executed by employees in their different work capacities. Besides, they also paid attention to the general presentation of the bank which bolstered its image. The style of management has attracted attention from its competitors. In addition, to Delta the system was part of the modern image. The message was successfully echoed by employees and received well by customers. The other cases were, to varying degrees, far from that but yet they are realising the importance of having a well-defined management philosophy. This was also the conclusion from the survey part of the research as, for example, only six of the participating JFOs had reported a mission statement and only two expressed it in writing. The JFOs agreed that there was some abstract strategic planning that was not committed to paper for distribution and follow up.

Style of Corporate Decision Making

The decision making style is related to the style of management. It is indicated by the centralisation or decentralisation of decision making. The majority of JFOs used a tight authorisation system to enforce centralised control. The impacts were facilitated and realised when managers had ample margin for taking decisions when needed. In effect, this was in itself a senior management decision. Dickson (1974: p. 29) explained that 'technology sustains and promotes the political system within which it has been developed'. Accordingly, the political decision to decentralise is not system related. The decentralisation of decision making meant more responsiveness to dealing with problems as they arise and reflected on the

quality of service offered to customers in real time. In addition, some management encouraged proactive rather than reactive thinking which was a helpful supplementary factor.

Decision making in JFOs was mostly *top-down*. This is compounded with an ambiguity of authority and responsibility. Senior management possessed the power to do the internal structuring as well as setting priorities and influencing the perceptions of their employees. To use Al-Kubaisy's (1985) term, these are characteristics of 'Sheikhocracy' or what Abd-Al-Kaliq (1984) termed as 'Bedoucracy'. According to Al-Kubaisy, 'Sheikhocracy' has a number of characteristics such as hierarchical authority, rules and regulations contingent on the personality and power of those individuals who make them, an open-door policy, subordination of efficiency to human relations and personal connections, indecisiveness, informality among lower-level managers and generally patriarchal approach. In addition, nepotism is the base for the selection of senior managers while emphasising qualifications for the selection of middle and operational managers. This is further enforced due to impacts of owner/manager practices in some of the JFOs where the chairman and the GM were father and son or members of the same close family occupying senior positions in the organisation. The findings in this regard were similar to Al-Rasheed's (1994) who noted that managers viewed the relationship between senior managers and lower level managers, or what he called subordinate managers, as an 'owner-employee relationship'. This seemed to tie with the traditional managerial practices.

Ali (1995) explained that Sheikhocracy is a product of 'Sheikho-Capitalism' combining Western bureaucracy and local tribalism and is characterised by personal rather than institutional arrangements. In the same vein, Al-Rasheed (1994) explained how cultural factors, as represented in the traditional religious values, might have contributed to prevent systematising and transforming the conduct of behaviour (e.g. paternalistic style of management) and undermined the preparatory work that is intended to mitigate the effects of future uncertainties.

The Sheikhocratic style of management seemed to be the commonest in JFOs. Despite the urge for the tight control in general, these managers were seeking consensus amongst employees to what they considered best. The difference between managers was in that some of them showed a tendency to the pseudo-consultative style and most importantly were ready to take calculated risks. Therefore, the Sheikhocratic managers were less likely to develop long term plans that are based on scientific calculations. In the light of this, it can be seen how difficult it is to manage a strategic fit between the business and IS strategy.

In addition, within the Context of the Arab culture, Ali (1993: p. 55) argued that there is a phenomenon of 'non decision-making' which implies that 'superordinate-situated managers' have manipulative control over the environment in which the subordinates work. This rather bleak statement is not far from the truth as related to describing how some of the JFOs were interpreted to have been managed. The style of decision making is a crucial point of difference when comparing organisations. None of the JFOs were considered by their management as information processing brains. Alpha was more reactive rather than proactive. Similarly, this could also be said for Beta. However, Gamma and Delta were more into proactive thinking and contingent planning.

Employment Practices in JFOs

The appointment of employees in Jordanian organisations is not generally based on qualifications and skills. As a Sheikhocracy, other considerations play a great role in the employment and firing even in the companies of the private sector. For example, in one of the cases an employee was due to retire due to reaching the retirement age. The bank offered to buy the extra retirement years for that employee but it was a major headache for the senior management. They were contacted by the Prime Minister's office, the head of the Trade Union and many others. The bank was socially obliged to keep the employee but the most that could be done was an internal transfer to another department in a low profile post. In another case involving fifteen employees, it was even more controversial

because of the number of employees involved. The case was raised in the House of Parliament and pressure was exerted to keep them in.

As discussed in the functional impacts section 9.2.1, JFOs can be compared further based on how their ISs have affected the employment situations in the different cases. The survey of JFOs could not confirm whether there was a reduction in the number of employees. The cases of part I can provide better insight related to this issue. For example, Alpha had expanded by adding a moderate number of branches but tried to re-assign employees. There was hardly any change to their total number of employees over the previous ten years which implies that they had reduced the working time wastage by proper utilisation of time and therefore, have actually improved the productivity of their employees. Beta was different. The number of branches and offices had increased from 27 in 1986 to 76 in 1997. The management considered that they reduced the number of employees but this was more noticeable in the head office departments rather than branches. They also had to re-assign employees due to expansion.

Gamma is a different case altogether. Following the merger the number of employees has increased and the overall number is still large in comparison to the number of branches they have. The management explained that it was their promise and commitment to the employees and to the public prior to merging. They had undertaken not to lay off employees. Delta was relatively lean. Considering that the bank was eight years old, the researcher believes that they have followed a balanced plan of expansion and employment. In terms of the profit after tax per employee ratio for the year 1997, Alpha was best followed by Gamma, Delta and Beta in the respective order.

In conclusion, the researcher interpreted that the better users of information systems who managed better results or impacts were those organisations who had signs of a unique corporate culture. Tolsby (1998) reported that culture constituted an obstruction to IT diffusion. This was mostly based on the management philosophy of running the work. There was a variation in the types

of cultures interpreted, for example, some JFOs have clearly operated with the 'business as usual' culture, but others adopted the result oriented culture or in a few cases, it was the performance oriented dynamic culture with a premium on innovation and creativity. The researcher believes that those JFOs which could be classified as having adopted the latter type of corporate culture were the most successful in exploiting the investment made in their IS. This concurs with Keen's remark that 'the competitive edge from IT comes from people now, not technology per se. The people edge comes from a culture of openness and collaboration and a history of proven competence in and commitment to collaboration' (ComputerWorld, 18/05/98: p. 66).

Policies towards Employees and Training

This factor is also interrelated with the style of management, the style of corporate decision making and the evaluation of IS and its contribution to performance. The general attitude towards employees makes a big difference because it relates to the actual appreciation of the management for the human resource. Those organisations that paid more attention to the needs of their users were simply better users of IS and consequently got more out of the investment. When employees were not motivated, they would be ordinary users of a system that is treated as a tool with limited capabilities.

The training was another important issue. It was evident that certain management acted with the view that since they had invested in the system there was no need for further side investments to improve work. This was probably related to a classic mentality of carrying out the work because employees had already been used to doing the work. There was no actual realisation that the introduction of the IS would engender a need of rethinking work, and in a few cases, even go as far as introducing a radical change by re-engineering the work.

Some of the JFOs emphasised training (system and banking) by having a specialised department. The successful users of ISs were very much aware that training is essential to instilling a corporate culture. In addition, they also realised

that it was not a one off time because circumstances change. Besides technological advances, the position of the organisation in the market changes and this implies that there is a need for continuously assessing the organisation and its employees. This is part of the need for carrying out a SWOT analysis. In general, high-performance cultures foster competence and encourage employees to be better performers by taking initiative and operating with high standards to satisfy customers because the retention of customers is often easier than acquiring new ones.

It might be appropriate to add here that Jordanian banks need to strongly emphasise the role of training and staff development in instilling corporate cultures. It is normally assumed that employees have to be trained on the use of the system for carrying out their work, but that is only the technical aspect. As a customer-focused business, banks need to train their employees on how to deal with customers in a way that distinguishes the character and image of the bank. In addition, the training programme should assist in raising the general awareness about the opportunities presented, as well as enhancing the abilities and skills of individuals to exploit the advanced technology. The competencies of employees can provide a good reflection of the culture of the organisation. In general, it works better for those organisations if they train their users by providing them with the knowledge and by improving their skills as related to banking operations and also the use of the technology. This is in line with Scott Morton's (1991) recommendation for removing one of the root causes of lack of impact of IT by encouraging heavy and early investment in human resources.

How is Evaluation of IS and its Contribution to Improve Performance viewed in JFOs

This factor has its indications and ramifications and this may explain why it is discussed, not only under technically rooted factors in sub-section 9.3.2 but also here under the heading of the cultural factors. After all, to evaluate or not to evaluate ISs in JFOs was purely a management decision. The evaluation is necessary to work out the contribution that an investment is making to the corporate performance. If this issue is not pursued then one might doubt the

rationality of the reasons behind such an investment. The evaluation of the investments, as argued throughout the thesis, is problematic. However, it is a necessary step that has to be taken.

The general attitude towards investing in IS varied amongst JFOs. This was particularly clear when investigating the four organisations of part I. Alpha had a good working efficient system but there are doubts if the effectiveness can be maintained. In Beta they were investing in the new system and the attitude in Gamma was to invest as needed. Delta had an advanced system and was already budgeting for future expansion. It was not possible to work out exact investments. The issue of investment was important when deciding the choice of system based on evaluating the tender documents. It was not based on ROI or similar methods. The case was that they needed a system and had to choose one. The cost played a major role in the investment decision and there was no evidence that any of those four banks had carried out any complete assessment to the contemplated investment in their ISs. It was more of a gut-felt irrational decision.

Evaluation was not a normally practised procedure in JFOs. In fact, there was only one formal attempt to evaluate the system in Delta and not much else to report except for a general reference to carrying out the evaluation work without providing specific details. In the survey part of the research, some JFOs reported that they did evaluate but it was interpreted that they were referring to the evaluation of the project at the procurement stage. The commonest used method was the feasibility study, the NPV in one JFO and the IRR in another.

The banks did not seem to see the need to evaluate as long as the systems were serving the purpose. The norm was to sort out problems as related to handling customer transactions and subsequently, meeting the needs of the internal users. The general attitude was to assume there was no problem unless a complaint was filed and the senior management became aware of that problem. The reaction would be to exert pressure in order to resolve the problem. Similar results were

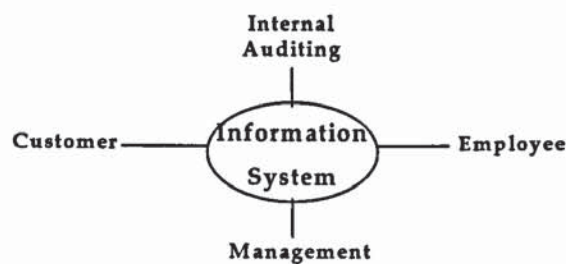
reported in the literature. For example, Owens et al (1996) explained that the responses they had received from executives in their sample companies, when asking about the evaluation of the systems, was that if a particular system failed to produce the perceived benefits, then it was immediately apparent.

The methods of adoption and implementation of ISs were interpreted to have been commensurate with the prevailing corporate culture. In principle, the need for the evaluation is seen as part of a corporate plan to monitor capabilities and introduce the needed changes in order to move on. Therefore, only a culture that is appreciative of the productive role of ISs would pursue regular procedures to make continuous evaluation of this corporate resource. Gurbaxani and Whang (1991) recommended that the evaluation of ISs should accommodate the specific managerial context. There was evidence from this research that organisations who evaluated, or had the intention to evaluate, had more efficient ISs and were relatively more innovative users of the technology. For example, in the case of Delta it was organised and the situation differed for the other cases. In addition, to Delta the implementation was a process of change and not merely an installation of technology (Orlikowski, 1993). Alpha procured a system and built upon it. Similar to Delta, when they started the implementation they had a small number of branches which made it easier for them. Beta's automation was ad hoc and lacked organised planning. Gamma was systematic in the case of the smaller and more modern partner but the classic partner had been a late starter to automating the business. Following the merger, the management became keen to unify and get the work going as one modern unified bank.

Jordanian banks need to be thorough and pay more attention to the formative evaluation of their ISs throughout the life cycle of their systems. The evaluation should be looked at as a frequently or quasi-continuously carried out activity. This involves the evaluation of initial and further investments and includes the continuous monitoring of the efficiency and effectiveness of the system. They can benefit from carrying out regular formal internal evaluations that are function/process specific.

In addition, the philosophy of evaluating the ISs in banks should stem from an understanding that these ISs are core to their work. Therefore, the role and value of the ISs are best unravelled by considering if the system fulfils the requirements of the different stakeholders. As illustrated at the ends of the lines in figure 9.3, the stakeholders are; customer, employee, management and internal auditing.

Figure 9.3: Positioning the Banking Information System



If the system answers the queries raised by the *internal auditor* then it safeguards the establishment. The auditors know exactly their auditing requirements and emphasise the need for the protection of security. The *employee* considers the ease of use of carrying out tasks and serving customers. The *customer* feels the difference in terms of speed and quality of service as related to faster processing of transactions and more accurate and meaningful statements. The *management* relies heavily on the system that is essential to carrying out their main tasks of planning, organising, staffing and generally managing the running of the day to day business.

9.3.1.2 Political Factors

Dickson (1974) argued that technological developments in general are essentially political processes. On the other hand, Hirschheim and Newman (1988) explained that it is important to understand the social and political processes of the organisational change due to the introduction and use of computer-based ISs. In mostly Sheikhocentrically managed organisations, one notices the patriarchal relationships characterised by dominance and the concentration of power in the hands of the senior management. In addition, there was a general lack of

delegation of authority and the use of unsystematic practices to assess general performance measures. Similarly, JFOs have mostly lacked the democratic experience which was exhibited in the enforcement of formalisation and the way of the distribution of authorisations. This sub-section sheds further light on issues related to the political process of the adaptation of ISs in the JFOs.

Internal politics in JFOs played an important role in the choice as well as the implementation and support of the system. More insight can be given by considering two of the part I cases. Beta had a conflict between the technical departments and sections (the 'analysis and programming' was a department while the 'implementation and technical support' was a section which is at a lower hierarchical level on the organisational chart). In addition, Gamma was still suffering due to the conflict between bankers and technical staff. Therefore, Beta and Gamma were considered less successful users of ISs. Weill (1990) reported a similar finding about firms that were politically turbulent.

Markus and Bjørn-Andersen (1987) explained that in theory, the power of the IS professional is linked to their ability to implement technological change. However this was not exactly true in those four Jordanian JFOs. The information systems have only reinforced the existing power distributions in those banks. In JFOs the treasury department had financial power before and after the use of the system but they generally had little influence on senior management decisions to run the business. In the majority of cases, the technocratic staff dominated by the computer specialists had limited managerial role and therefore limited influence on decision making. The general tendency was actually to marginalise them in those organisations so as to avoid any political destabilisation which might have dire consequences. The discussion will be pursued further within the coverage of the dimensions of empowerment of the employees and ease of adaptation to IS and resistance to change.

Empowerment of Employees and Ease of Adaptation to IS

Employees of Jordanian organisations do generally exhibit a high degree of tolerance to decisions they might not agree with simply because those decisions

came from the top. The degree of the empowerment of employees to take decisions without referring back to senior managers was different amongst JFOs which makes it a point for comparing those organisations. The banks differed, to a limited extent, on how much, if ever, to empower the subordinates by widening their margin for taking decisions. For example, Alpha management centralised control and limited empowerment. It was felt that the bank was small and the management needed to maintain tight control. Beta management was, in this regard, classic and reluctant to empower employees but this was considered for the future because circumstances, as a senior manager had remarked, did not permit or encourage empowerment. Gamma was in a different situation due to the merger but the management is modern and will probably opt for empowering their employees. The bank has grown to be large and it is difficult to envisage how they could even afford not to empower employees in order to decentralise the complete execution of daily transactions. Delta maintains the centralised control but already operates by empowerment for the execution of daily work whenever feasible.

Another important question is the one related to the ease of adaptation of those organisations to the ISs and how the individuals managed to cope. The form and time period of adaptation was organisation dependent. For example, Beta still needs a few years before one can say it has adapted to the system. In the case of Gamma, the merger had engendered unforeseen problems of adaptation because of the incompatibility of the two systems that were formerly used in the two banks which had merged. Alpha and Delta have adapted to their systems in their different ways. The four organisations of part I had different styles of leadership and to a large extent different employees, in terms of ability and professionalism, within those organisations.

Resistance to Change

One of the major hurdles to having effective adaptations of ISs is the resistance of individuals to change resulting from the introduction of those systems. Markus

(1983) explained that understanding organisational resistance to systems is important because it guides the behaviour and influences the actions related to the use of those systems in organisations. Dickson and Simmons (1970) pointed to a number of possible reasons for resisting the use of corporate ISs which are:

- 1- Threats to economic security.
- 2- Threats to status or power.
- 3- Increased job complexity.
- 4- Uncertainty or unfamiliarity.
- 5- Changed interpersonal relations or work patterns.
- 6- Changed superior-subordinate relationships.
- 7- Increased rigidity or time pressure.
- 8- Role ambiguity.
- 9- Feelings of insecurity.

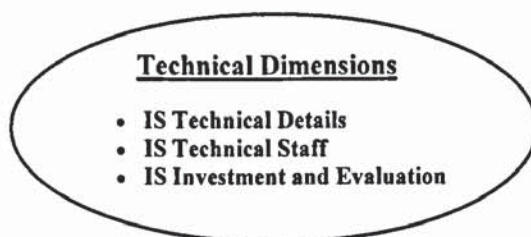
All of Dickson's and Simmons's reasons were arguably and invariantly experienced by the employees of the four JFOs of part I and also reported by some respondents in part II. However, the reasons were not all system related. For example, the four banks of part I did not offer similar scales of salaries and the respective employees felt economically insecure. This was less the case in Delta or Gamma but more in Beta and Alpha. The effect on the status or power was related to, for example, the de-skilling effects. Old employees had generally felt that they were losing their competitive edge because the young employees were quickly learning to do the same jobs and perhaps more effectively. In the same vein, the use of the IS was complex to some of the old employees due to unfamiliarity which in turn caused uncertainty. This varied between organisations. The other issues were faced to lesser extent and as mentioned before, they were also linked to other factors. The most influential of those factors was the type of management because they could use the IS to turn the majority of Dickson's and Simmons's reasons for resistance into advantage points that employees would appreciate.

9.3.2 Technically Rooted Factors

What is common amongst JFOs was that they were interested in protecting their *technical core*. Hedberg and Mumford (1979) explained this as maintaining the procedures and practices used to carry out banking operations. In order to avoid disturbance to the technical core, they needed to fully control the use of ISs.

There is an inherent assumption about the degree of similarity and the technical completeness of systems when intending to investigate the phenomenon of the use of ISs in organisations from the same sector. However, in reality the technical set ups in those JFOs were different and this gave rise to the possibility of partially attributing some of the variations in the impacts of ISs to technically rooted factors as will be discussed next. Figure 9.4 illustrates the dimensions used in the analysis of the technically rooted factors.

Figure 9.4: The Analytical Dimensions for the Technically Rooted Factors



9.3.2.1 IS Technical Details

The technical capabilities of the systems as discussed in sub-sections 7.2.2.2, 7.3.2.2, 7.4.2.2, 7.5.2.2 and 8.3.2 were different. None of the systems were complete. In general, the range of the systems hardware used in JFOs varied from a simple mini-computer to the relatively advanced. The software extended from simple applications to more advanced parametrised banking systems. As for the cases of part I, Beta and Delta had on-line inter-branch systems while Gamma was managing two incomplete on-line inter-branch systems. Beta had a number of incompatible systems with different hardware and software platforms that could not communicate with each other. Consolidated customer databases were

possible in Delta and Alpha and partly possible in Beta and Gamma. The problem of consolidating data and backing up was a major headache for Beta.

Although the IS department is still considered by the majority of the JFOs as a cost centre, it could be worth the effort for those organisations to investigate the possibility of using the charge-out of the value of the IS service rendered to the respective departments and branches. This can be envisaged as a way of pushing for a more advanced system facilitated by the distribution of costs. Therefore, from an accounting perspective, this capital investment is much smaller than that borne directly and totally by the head office. However, the JFOs that were considering the adoption of the charge-out were aware of the difficulty of implementing such a system. As was found out in this research, it was almost impossible to work out the exact 'productive' use of IS by each department or branch.

In addition, albeit not lacking in professional technical personnel, JFOs should have the right technical management that may contribute to enhancing the role of the system in achieving the organisational objectives. Technical expertise may be useless if not directed properly in accordance with what is planned rather than having *ad hoc* arrangements for resolving problems in a reactive manner. Technical management has to make sure that the technical staff receive proper periodic training which will boost their confidence by keeping them up-to-date and abreast of technological advances.

9.3.2.2 IS Technical Staff

JFOs had different set-ups for the systems work and the size was relatively proportional to the size of the organisation. The number of technical staff in JFOs ranged from 6 in one organisation to a total of 160 in another. The JFOs seemed to have capable technical staff. Problems have mostly arisen from having a difficulty in communication between those technical people and the bankers. It was noticed that having a powerful person in charge of the IS department was a great help to facilitating and advancing the work. For example, this was the case in Delta. It

was a major problem of concern for Gamma that resulted in bankers' take over of the process of deciding the choice of the system. Beta were forced to have an Assistant GM who undertook the task of reorganising and managing the technical and banking operations works. Alpha's technical management was not successful in communicating upwards in the hierarchy, even warning messages about the system capabilities.

Jordanian banks need to recognise the importance of the human processes in managing any organisational change that has a degree of dependency on the technology. This covers the management of change by pursuing plans to achieve objectives. In addition, in a situation that involves technical details, it is advisable that technical people are involved. This does not mean that they lead the project but should at least take part in managing it. It does not help if the management promotes the view of *the technocratic bigotry among the technologists* which was clearly noticed in the cases of part I. Furthermore, in order to mitigate the effects of resistance to automating working procedures, a possible common sense solution might be to involve those who are likely to be affected by the technological change. This will make users responsible and accountable for the investment in the corporate IS.

9.3.2.3 IS Investment and Evaluation

This issue was raised earlier in sub-section 9.3.1 under cultural factors but the emphasis was arguably placed on the vital role of senior management in the evaluation of investments in IS. However, the system itself is an equally important determinant to the evaluation in so far as the technical sophistication is concerned. This was evident in the four cases as presented in chapter 7. In case Alpha, the system had the highest score according to the CBJ assessment but this same system is at the end of its tether. It will hardly allow any more expansion and still uses obsolete terminals. The same point can be used against the technological supremacy argument and the need for racing in competing with other banks. The system in Beta was incomplete while due to the merger with

another bank there was a conflict of choice between two systems in Gamma. Delta had an on-line and inter-branch system.

In general organisations come to discover what they could do with a system, but they would not be able to appreciate the full range of work it might do or the wide possibilities that it could offer. Such organisations could not make a conscious and enlightened decision about the choice of system for the present and the future. They went out and purchased a system, on which they had spent most of their time trying to get it to fit the work of the organisation that it was not meant to be, or rather cut out for. The appreciation of the strategic value of such a modern system had not been part of the thinking of former managements. The JFOs did not actually have fully automated working places. However, as Walsham (1989) put it, the fact is that true office automation is a possibility rather than an actuality.

Similar to what Markus (1994) concluded in her case study of a complex American organisation, the researcher interprets that the use of those ISs was not linked to the characteristics of the technology but rather on the predictable and unpredictable use of the technology. A relevant point that is worth noting is the institutionalisation of technology in those Jordanian organisations. Bijker (1987) explained that when the technology stabilises upon reaching a consensus about the form that prevails amongst users, the interpretive flexibility is significantly reduced. A similar understanding was expressed by Iacono and Kling (1985) when explaining that, after some time of use of IT has elapsed, the managers change sentiments. It is the change from fascination at one end, through routinisation, to a final stage of disappointment. Iacono and Kling have pessimistically noted that when this stage occurs the management recognises the limitations of the available IT equipment. The researcher noticed variation in the degree of institutionalising of technology in those different JFOs. This was an important factor governing the degree and speed of adaptation of the use of IS in the host organisations. Tyre and Orlikowski (1993) reported similar findings when discussing the pattern of adaptation of new process technologies in 3 US

and European manufacturing and service organisations. They concluded that the sharp focus of users on the malleable technological capabilities faded over time. This was the state of saturation or institutionalisation or when the technology and the way it is used, as Tyre and Orlikowski explained, become eventually taken for granted. The latter state is still far away from realisation in the majority of the JFOs.

Since most of the JFOs were not considered to have reached the stage of post-implementation yet, it is important that they embark on managing the process of implementing the technology more effectively. These organisations need to seize opportunities for making the optimal use of the ISs in order to support and enhance work approaches and mechanisms. In addition, for any further investments in ISs, banks should pay attention to what Weill and Olson (1989: p. 15) called the *components of the conversion effectiveness*. These components are top management commitment to IT, previous firm experience, user satisfaction with systems and the turbulence of the political environment of the organisation.

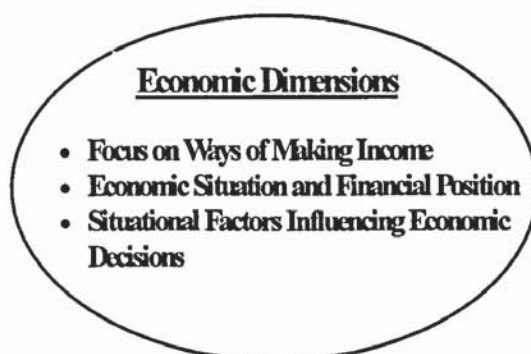
In increasingly competitive conditions, haphazard decisions on IT purchases may place the organisation in a bad situation when competitors are pursuing logical procedures for making IT decisions. Some of the JFOs have to make ruthless decisions to re-evaluate their technical capabilities and, if needed, make a fresh start by deciding to go for a new system that is advanced by all standards and will ensure future survivability. This is a radical step for the majority of those banks to take but, albeit painful, it might be necessitated. The idea of 'plastering' rather than overhauling or radically changing, in order to keep the system running for as long as possible, might prove damaging with long term effect. The JFOs need to take a serious look at the option of technical re-assessment as part of their strategic thinking. Two important points are worth bearing in mind while rethinking the IS strategic planning. These points are the cruciality of having an integrated system with the right infrastructure and the necessity to standardise hardware, software and system working techniques for delivering those required services.

Jordanian banks are slowly climbing onto the technology bandwagon by investing in the new technological advances. Due to the size of the economy and market, large investments in IS/IT are not readily justifiable. However, the management of those JFOs seemed to be aware of the existing potential and opportunities of the IS/IT in meeting the diverse needs of customers. The majority of the Jordanian banks opted to buy the basic banking package (the Kernel) and went on to tailor make their sought after systems. It can be hypothesised that at some stage, all banks will have almost identical state of the art IT. The opportunity might even arise for possible co-operation amongst banks to standardise. However ISs, as discussed in chapter 3, are not synonymous with IT. The rest of their constituents will continue to be elements of competition between those banks.

9.3.3 Economically Rooted Factors

The economically rooted factors had limited effects which meant they could only partly help explain the variations in the impacts of ISs between JFOs. Figure 9.5 shows the three dimensions that are discussed within this sub-section.

Figure 9.5: The Analytical Dimensions for the Economically Rooted Factors

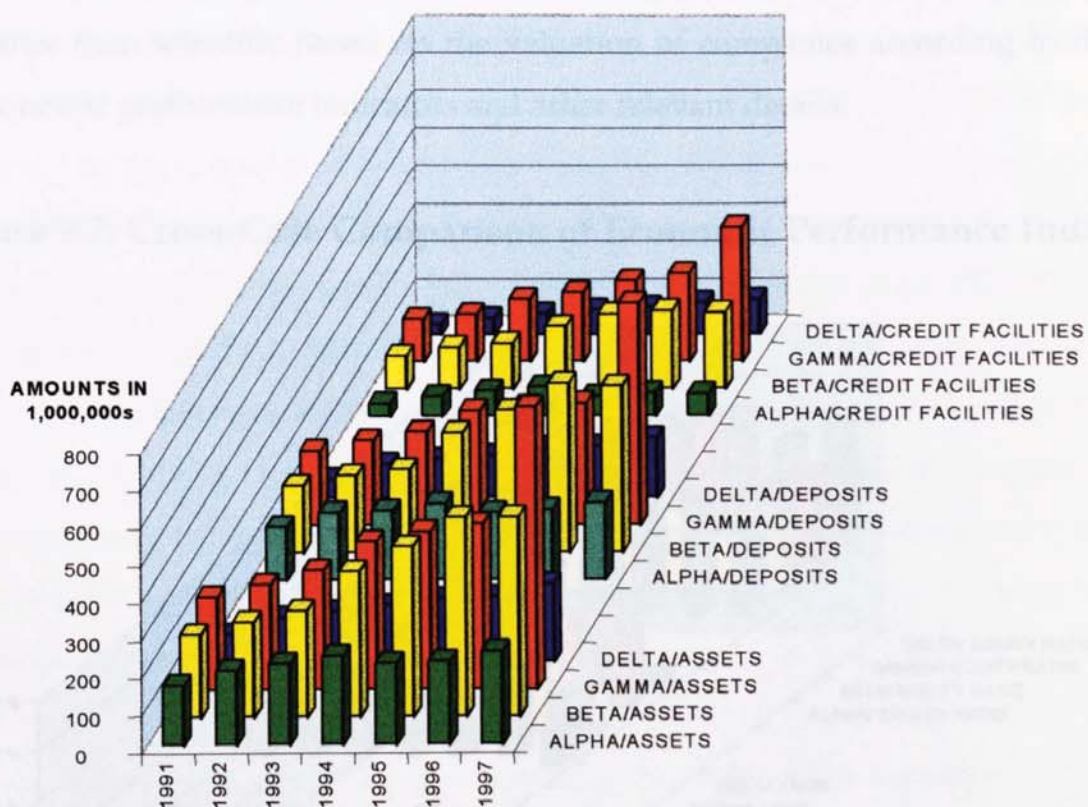


The simple formula of making profit in banks was mentioned earlier as making more money on lending than what is given out as interests to depositors. In real

life, the situation is more complicated and banks differ in their emphasis and focus on ways of making income. In general, Jordanian banks make money in the following ways:

- 1- Margins (interests): Banks are expected to deposit 14 % of deposits in the CBJ as compulsory reserves that they don't earn money on. In addition, banks estimate a 2 % overhead costs on deposits.
- 2- Commissions (L/Cs, L/Gs, foreign exchange and returned cheques charges).
- 3- Investment in estates (retained collaterals due to unsettled payments).
- 4- Trading in shares and bonds.
- 5- Interests on deposits in other banks.
- 6- Foreign exchange trading.
- 7- Other revenues (Tlx, Fax, SWIFT and Mail charges).

Figure 9.6: Cross-Case Comparison of Assets, Deposits and Credit

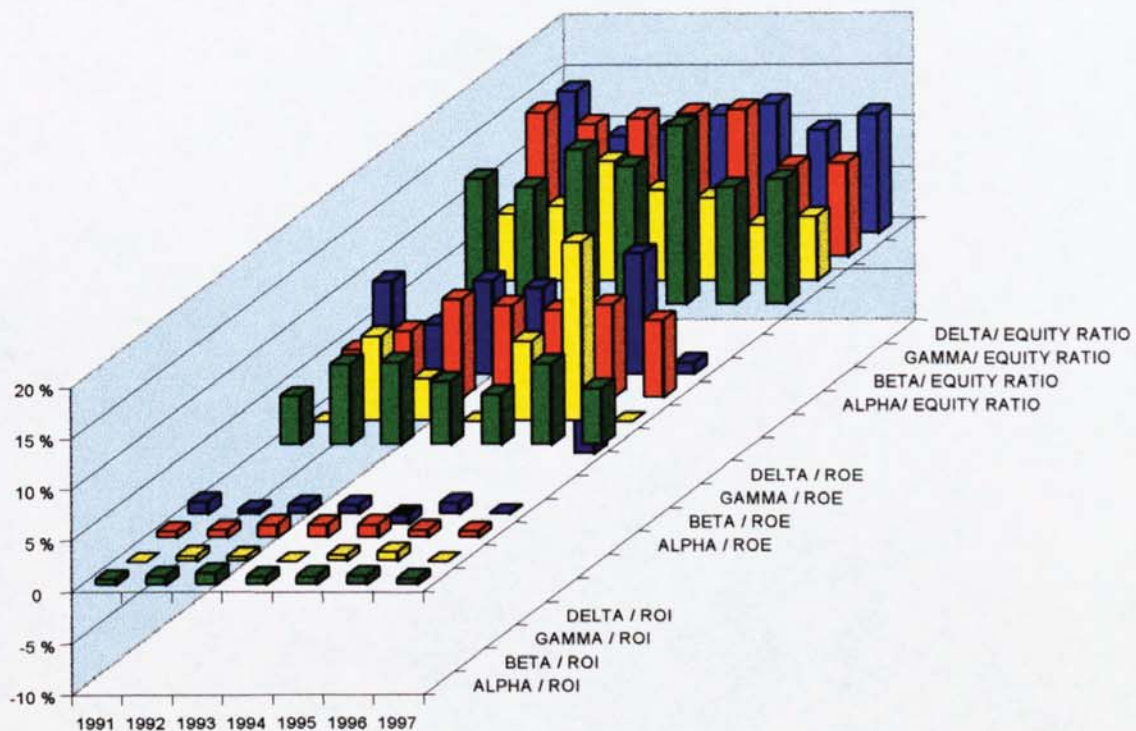


As indicated in figure 9.6, which shows a comparison of the assets, deposits and credits of the four banks of part I, there was a noticeable difference in terms of

size and growth over the period 1991-1997. Banking analysts report that such differences could partly explain their varying business performances but this is not necessarily linked to the use of ISs in those organisations. The JFOs are similar in business dealings and also the running of the day-to-day work, but the use of ISs was not a carbon copy. This was especially evident in the four cases of part I.

Comparing cases according to their economic performance indicators, as shown in figure 9.7, does not show great variance although it is more noticeable in the ROE case. It is also clear from those figures and the present share prices, as were regularly monitored by the researcher, that they do not help explain the contribution of those ISs to the corporate performance in those banks. This is due to the lack of uniformity as well as the economic and political instability in Jordan and the surrounding region. Jordan is a small country that is relatively poor and the investments in organisations in general are not based on how advanced those organisations are. The trading of shares is usually speculative rather than scientific based on the valuation of companies according to their economic performance indicators and other relevant details.

Figure 9.7: Cross-Case Comparison of Economic Performance Indicators



The situation of the IS in Gamma is unresolved to say the least. Gamma has maintained running two banks within, although interestingly it was appearing as one to outside customers. A lot of efforts have gone into consolidating data but there is no one on-line inter-branch system yet. Notwithstanding, Gamma figures for 1998 showed a doubling of the profits. Similarly, Beta were at the early stages of introducing the new system but the profits for 1998 were astronomical especially when considering that the actual ROI and ROE percentages for 1997 were zero due to having zero declared profit. Alpha and Beta have both exhibited comparable figures of profits in 1998 to their previous averages.

It is also important to note that all JFOs had to raise their capital to 20 Million JD by 1/1/1997 as per the CBJ request. In the process, they have used up most of their reserves and the remaining sums were managed by issuing additional shares. Despite making higher profits for the year 1998, the share prices for the four banks have decreased. In fact, they stand now (March 1999) at their lowest ever values. Obviously, this was not dependent on the performance of those organisations and, as mentioned earlier, may be linked to other destabilising factors. For example, in addition to the pertinent instability that seems to be endemic to the countries of the Middle East, the end of 1998 and the beginnings of 1999 witnessed an event that has clearly affected the economic situation in Jordan. The lifetime Jordanian Monarch who ruled Jordan since 1951 became terminally ill and died in February 1999. This was considered to have shaken the confidence of investors and threatened the economic stability of the country even more. During 1998, the Amman Financial Market saw share prices plummet by, in some cases, as high percentages as 50 % even for the most stable companies like Arab Potash which is over 50 % government owned and has a long term monopolistic contract.

In addition, the research found no evidence to support the argument that the financial situation of those organisations, as exhibited in their financial statements or other competitive market conditions (e.g. increase of market share), has dictated their choice of the system. The efficiency and cost saving goals

(short-term considerations) were paramount and overshadowed other factors that may have affected the choice in the majority of JFOs. This fits with the prevalent Sheikhocentric managements in those organisations. In the same vein, it was noted that the majority of JFOs did not resort to using systematic performance measurement of indicators or full benchmarking against competitors.

The economic situation of the organisation plays an important role in deciding the size of the investment in IS. The more profitable the organisations the larger the investment in IS. It was seen as more likely that those organisations would maintain to inject more money into maintaining the 'computer system' and keeping it upgraded as necessitated by work needs. In addition, the age of the firm is also relevant because it was evidenced in this research that the majority of the younger establishments had more modern systems. This could imply that they were attempting to make a fresh start with a relatively good system.

The market conditions of competition were expected to be influential in stressing decisions to improve the share of the market and increase profitability by exploiting the technology. This was not entirely true. In addition, there was no evidence of any direct linkage between the organisational profitability and the technical sophistication of the system in use. This was also reported by Shannak (1994). Similarly, Cragg and King (1992) found that IS sophistication was not a success factor in improving firm performance while Mahmood and Mann (1991) expressed that it had little effect. Wijnhoven and Wassenaar (1990) concluded that different installations had different impacts. In addition, the economic situation of the organisation had other intervening impacts that could act as catalysts for the realisation of some of the impacts of ISs in a way which is closer to the anticipated impacts. This is another supporting argument against the use of a priori models (hypothesised causal relationships between independent and dependent variables) to study impacts of ISs because some organisational factors (intervening or moderating) might be missed out altogether. Therefore, it may be

concluded here that the performance of organisations could not be explained solely by variations in the type of system used.

9.3.4 Environmental Factors

In theory, external factors influence the work of organisations and can therefore affect the role and value of the use of ISs in banks. However, the stand-alone effect is seen to be minimal and to a large extent neutralised because the environmental factors are supposed to have more or less equal effect on all JFOs. They are listed separately in an attempt to highlight these factors although they were already referred to while covering the other attributions of the variations in the impacts of ISs. The summarised list includes some of the macroeconomic factors that were considered to have been influential intervening or moderating factors. Figure 9.7 provides a quick guide to those influential environmental factors.

Figure 9.8: The Analytical Dimensions for the Environmental Factors



1- Jordan lies in the Middle East which has always been an area of instability and turbulence. Therefore, the political and economic instabilities go hand in hand and have prime influencing environmental factors on the commercial work in that part of the World.

2- The CBJ exerted tight control and was continuously trying to enforce its policies. This became exceedingly necessary after one fast advancing bank went

into receivership. The result has cost the government of Jordan, represented by its central bank, the relatively large amount of approximately 750 Million JD according to figures released by the CBJ in 1999. In addition, the CBJ demanded that all licensed banks should aim to fully automate their work. The CBJ wanted banks to submit the regular reports on disc and it was not a straight forward job for those cases that did not work on-line and inter-branch or had the consolidated data readily available.

Furthermore, the CBJ had exhibited a change of mood by going back on previous directives that were intended to help drive the economy and spur an economic boom. For example, banks were encouraged to merge by offering incentives but this was changed soon after upon the change of the governor of the central bank. Some of the JFOs found this confusing and went back on their plans to merge.

3- There is a large number of banks for a small country with a rather small economy like Jordan. Therefore, customers had a selection of banks to choose from because, as was discussed in chapter 2, the Jordanian banks were of different size and types. Not all of them were commercial banks according to the CBJ classification. Five of them were investment banks and one was an Islamic bank. The rest were either commercial or specialised. Therefore, one can see how the competition was not even. In addition, all investment banks were asked to convert to work as fully commercial banks by 1997 and they have already done that. Despite the potential to use ISs as competitive drivers under such working environmental conditions, the competition, in itself, was not considered as a main driver per se for pushing the technological advances in the banking information systems.

JFOs are exposed to further competition originating from other local banks that are not public share-holding companies. Besides, upon becoming an official member of the World Trade Organisation (December 1999), Jordan will have to meet the conditions of free trading which should introduce more international

competition to local banks. These are some additional environmental factors that have to be reckoned with for the long-term survivability of JFOs.

It has to be mentioned here that partnership with other international banks can prove useful. In one of the banks it was obvious that having a foreign bank as a major shareholder was certainly beneficial. Albeit the bank being young, it had already made use of the experience of the partner especially as related to IS planning and demonstrated a leap forward to advancing the position of the bank.

4- There are other administrative and infrastructural factors related to conditions of commercial operations in the country. For example, the backbreaking bureaucratic procedures are still dominant. In addition, Jordan has some way to go before processing the technical infrastructure that facilitates easy and quick electronic communications due to the old telecommunication networks. The JFOs complained about the tax department because of over estimation of income as well as having to pay high taxes/duties on computers and related equipment which makes local purchases expensive.

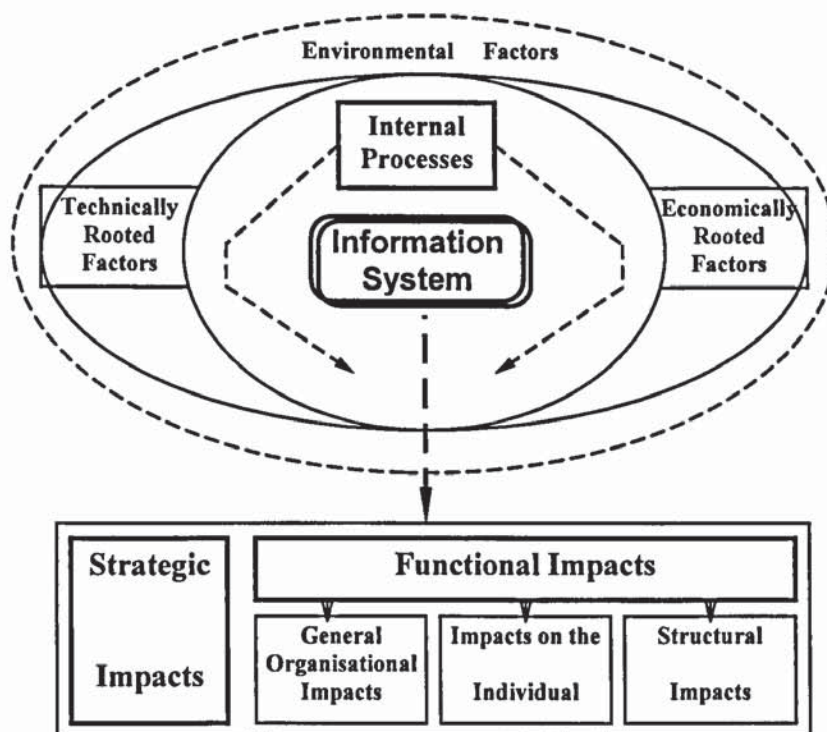
The following two sections provide a summary of the most interesting findings of the research as presented in chapters 7 and 8 and in the previous two sections 9.2 and 9.3. They present the impacts of ISs as well as the attributions of the variations in those impacts. Figure 9.9 illustrates the role and value of ISs as a package that contains the impacts and the attributions that may help explain the variation in those impacts.

9.4 Summary: How do ISs Impact the Work of JFOs?

Information systems impact organisations in a number of ways. This research adopted the view that those impacts should be evaluated at the strategic and functional levels. The anticipated impacts were not identified as only the originally intended impacts. The following sub-section 9.4.1 summarises the strategic impacts and it is followed by sub-section 9.4.2 which provides three lists

of functional impacts under the headings of general organisational impacts, impacts on the individual and structural impacts.

Figure 9.9: A Depiction of the Role and Value of IS



9.4.1 Strategic Impacts

The research revealed that ISs played relatively little importance as a strategic tool. The general strategic impacts listed in table 9.2, which appears at the end of this sub-section, are subsumed within the following points:

1- In the majority of cases, there were no clearly defined business or IS strategies and no obvious strategic fit or alignment. The JFOs' concern was based on an appreciation of the need to maintain stability and survival. Therefore, improving the quality of the banking operations and using the IS to achieve a better co-ordination of work between headquarters, offices and branches was seen to feed into the aim of attaining a long term survivability plan.

2- The research found that in the majority of JFOs there was a tendency towards centralising control. The decentralisation of activities varied in the different JFOs and was related to the technical capabilities of the IS(s) in use.

3- Improving customer services (on counter, plastic cards and detailed statements), as well as adding to customer confidence. The ISs were work enablers and not work drivers. This would probably mean that there might be a need to reconfigure the nature of the bank/customer interactions.

4- Restraining new employment was a by-product of the use of ISs.

5- No impact on the strategic thinking which was based on short-term planning and reducing uncertainty to permit better risk taking chances.

6- There was little evidence that IS created sustainable competitive advantage and the contribution to face present competition was modest.

Table 9.2: The Strategic Impacts of ISs in JFOs

(Based on Parts I and II)

- | |
|---|
| <ul style="list-style-type: none">• Little evidence that IS created sustainable competitive advantage or helped ward off present competition• Helped in co-ordinating work and consolidating data as well as the simplification of the communication between the head office, branches and internal departments• Helped improve customer services by efficiency related contributions and therefore were more like work enablers than work drivers• Helped enforce the tendency towards centralising control and decentralising activities• Restraining new in-take of employees• No impact on the prevalent short-term planning• No direct impact on helping produce a clearly defined business or IS strategy and no obvious strategic fit or alignment |
|---|

9.4.2 Functional Impacts

Similar to the way they were discussed in sections 8.2.2 and 9.2.1, the functional impacts of ISs as found in JFOs are presented under three interlinked categories namely general organisational impacts, impacts on the individual and structural impacts. Table 9.3, which is presented at the end of this sub-section, provides a concise summary of the functional impacts of ISs in JFOs.

9.4.2.1 General Organisational Impacts

The general organisational impacts of the use of corporate ISs are summarised as follows:

- 1- As account and product based systems, they were ideally suited for automating the routine transactions. They were reported as useful tools and query systems.
- 2- ISs have improved productivity of operations by reducing time for processing transactions, increasing the processing volumes, enhancing quality of service and providing the facility to offer new services.
- 3- The ISs have technically permitted an increase to the number of customers that could be dealt with effectively without much increase to the amount of other resources.
- 4- The improvement to the on-the-job performance and productivity meant freeing employees' time to carry out other tasks. This also applies to senior management due to receiving some executive summaries as needed.
- 5- Speeding up the process of information management which affected decision making.
- 6- There was generally an overall saving in time and expense as well as an indirect contribution towards increasing the profitability by, for instance,

accurately calculating interest or avoiding opportunity loss due to not fully investigating a loan and the loanee.

7- To different degrees amongst JFOs, the ISs helped decrease the fragmentation of jobs since they were being pushed to the front office.

8- There was no reduction of dependency on the use of paper but rather made the work less manual.

9- The research found an increase in the available facilities for producing various reports that may help the senior management do the budgeting work more accurately.

9.4.2.2 Impacts on the Individual

As was explained in chapter 5, the impacts on the individuals were only looked at as part of the overall organisational assessment of the impacts of ISs. The following points state how the individuals concerned were impacted:

1- Increased employee satisfaction by virtue of simplifying work which has become less demanding in time and effort.

2- ISs reduced job security as employees became more easily replaceable.

3- The face-to-face internal communications became less and there was additional stress due to enforced accountability as responsibilities were better delineated.

4- ISs were seen to have had a limited deskilling effect.

5- There was a reduction in the need for unskilled workers. This is despite the fact that the routine work itself did not demand high mental capabilities. There was limited relocation of employees to do other jobs elsewhere in the organisations.

6- ISs have provided only a little help to expose hidden talents and gave better promotional chances for skilled employees to advance up the managerial ladder.

7- Customers appreciated the improved quality of services offered in terms of speed of transactions and accuracy of statements of account.

9.4.2.3 Structural Impacts

The corporate ISs in JFOs had some structural impacts which can be listed as follows:

1- There was little noticeable effect on the organisational power structure or in helping rectify such dysfunctional imbalances to maintain the equi-power distance amongst employees and departments. However, due to some structural impacts some departments gained more power. These included the IS and finance departments.

2- There was a redistribution of responsibilities which meant a change in the assigned authorisation for the use of the IS. The command and control became faster and more efficient. For example, the IS helped enforce better centralised controls over the work of branches. This meant there was improved financial control and a bilateral security base.

3- The levels (layers) of work were reduced. This was mostly at the operational level due to the transfer of back office operations to the front office. In addition, there was a reduction in the number of departments, for example the disappearance of the accounting department. Concomitantly, the system increased the span of control.

4- The role of the cashier in banks with on-line systems was enlarged.

5- Branch managers could afford more time for marketing and seeing to the needs of their valued customers.

6- Increased the importance of middle managers as mediators between subordinates and their senior management. This was clearer in the bigger banks. In fact, the research found that the work of managers was improved and the quality was refined.

Table 9.3: The Functional Impacts of ISs in JFOs
(Based on Parts I and II)

<u>General Organisational Impacts</u>
<ul style="list-style-type: none"> • Automated routine transactions and routinised work • Was reported as useful tools and query systems • Improved productivity of operations and permitted a potential increase in the number of customers • Offered the potential to increase the capacity to modernise and innovate • Freed employees and management time to do other tasks • Speeded up the process of information management • Helped decrease the fragmentation of jobs by moving them to be executed in the front office whenever possible • No reduction of dependency on the use of paper
<u>Direct Impacts on the Individual</u>
<ul style="list-style-type: none"> • Minimal effect on job security, job satisfaction or enhancing the employee's ability to take decisions. There was some increase to employee satisfaction as work became less demanding in time and effort • Reduced job security due to the relative ease of substituting employees • Impacted internal communications but this meant tighter control due to quick spotting of mistakes which caused extra stress • There was some de-skilling impacts due to full dependence on the system • Provided a little help in discovering talented employees • ISs did not contribute to learning banking or technical operations • Customers appreciated improvement of quality of services
<u>Structural Impacts</u>
<ul style="list-style-type: none"> • Little effect on organisational structure or formalisation • There was some redistribution of responsibilities • Lack of informal communication between top management and employees • Limited effect on enlarging span of control • Increasing power content of work positions was seen as limited to IS department • Decentralisation of work activities and centralisation of control • Users considered that the use of IS helped reduce managerial levels but the managers did not report change of positions • Enlarged role of cashier in banks with on-line systems • Increased importance of middle managers

9.5 Summary: Why were there variations in the Impacts?

The variations were discussed in the previous section under the headings of the internal processes: cultural and political considerations, economically rooted factors, technically rooted factors and environmental factors. This brief presentation will cover the factors in the same order and table 9.4, which is presented at the end of this sub-section, provides a concise summary of the four groups of factors.

9.5.1 The Internal Processes: Cultural and Political Considerations

The internal processes, as discussed in sub-section 9.3.1, were found to be the most prominent factors that explain the variations in the impacts of ISs between the Jordanian financial organisations. The following points represent key issues of importance that help elicit the role of the internal processes as attributions of variations in impacts. For consistency with the previous presentation, the points are presented under the two headings of cultural factors and political factors.

9.5.1.1 Cultural Factors

- 1- The styles of management in JFOs were varied on the spectrum of the autocratic type that had the characteristics of a Bedoucracy or Sheikhocracy. The democratically inclined style of management was more conducive to the realisation of positive impacts.
- 2- Lack of awareness of the employees of the management philosophy was considered to have negative consequences on the realisation of intended impacts.
- 3-The senior management knowledge about technology with foresight and planning and the need to face the increasing levels of fragmentation accompanying the introduction of the technology.
- 4- The style of decision making and the accompanying harmful practices. This includes issues related to the prevalence of Sheikhocracy as a favourite choice of governing the JFOs.

5- The difference in the practices of employment. The research revealed that the Sheikhocratic practices were the commonest in JFOs.

6- The classification of Corporate Culture as to whether it was business as usual, result oriented culture or performance oriented dynamic culture. The JFOs that were seen to have a culture that is anything close to the performance oriented dynamic type were the most successful users of IS and exploiters of the investment in IS.

7- The general attitude of the senior management towards employees. Those JFOs who paid more attention to their employees were considered better users.

8- The commitment to offering full technical and banking training to employees.

9- The appreciation of the importance of IS evaluation and contribution to corporate performance.

9.5.1.2 Political Factors

1- The type of social and political processes that have accompanied the organisational change due to the introduction and use of computer-based ISs.

2- The type of internal politics practised by organisations.

3- The degree of empowerment of employees and the ease of the process of adapting to IS.

4- The degree of resistance to change.

9.5.2 Technically Rooted Factors

The technically rooted factors, as discussed in sub-section 9.3.2, were found to have effected the variations in the impacts of ISs between the JFOs. This is summarised in the following points:

- 1- The availability and implementation of an IS strategy.
- 2- The degree of completeness and sophistication of the technical set up available.
- 3- The professionalism of the technical personnel and the type and qualities of the technical management.
- 4- The degree of harmony between the technical people and the bankers.
- 5- The degree of the adoption and promotion, by the senior management, of the view of the technocratic bigotry amongst the technologists.
- 6- The involvement of the users in the design and development of the IS.
- 7- The extent to which the use of the IS was linked to the characteristics of the technology.
- 8- The extent to which the technology has been institutionalised in the respective organisation.

9.5.3 Economically Rooted Factors

Some consideration was given to the role played by the economic factors in influencing the intensity of the impacts of ISs in JFOs. Based on the discussion that was presented in sub-section 9.3.3, the following points present the most relevant issues that demonstrate the economically rooted attributions of impacts:

- 1- The microeconomic situation and the degree of economic stability within the organisation.
- 2- The extent to which the organisation resorts to using systematic performance measurement of indicators and using benchmarking against competitors.
- 3- The size of investment in IS and availability of future plans for expansion.

9.5.4 Environmental Factors

These factors were not explicitly stated in the research questions as potential attributions which might influence the variation in the impacts of ISs between JFOs. However, the research found that they do have some effect and therefore their relevance was discussed in sub-section 9.3.4. The following points provide a brief summary of the important environmental issues as concluded from the empirical work:

- 1- The general political and economic instabilities in Jordan and the surrounding region.
- 2- The tight regulation and monitoring by the central bank of Jordan.
- 3- The large number of competing banks in Jordan. These include the JFOs and the other banks that are not public shareholding companies.
- 4- The administrative and infrastructural difficulties related to the commercial operations that act as obstacles to reaching full organisational impacts of ISs within the Jordanian financial organisations.

Table 9.4: The Attributions of the Variations in the Impacts of ISs in JFOs

FACTORS		DESCRIPTION
Internal	Cultural	<ul style="list-style-type: none"> • Style of Management • Awareness of employees about the management philosophy • Senior management knowledge about the technology • The style of decision making • Practices of employment • Type of corporate culture • The general attitude of the senior management towards their employees • Training practices adopted • The appreciation of the role of the evaluation of IS
	Political	<ul style="list-style-type: none"> • The social and political processes of organisational change due to IS • Type of internal politics practised • Degree of empowerment of employees • Degree of resistance to change
Technically Rooted		<ul style="list-style-type: none"> • Availability and implementation of IS strategy • Completeness and sophistication of the technical set up • Professionalism of technical staff and the type of technical management • Harmony between technical people and bankers • Senior management view towards technical staff • Involvement of users in the design and development of IS • The linkage between expectations from IS and actual use of technology • The institutionalisation of technology
Economically Rooted		<ul style="list-style-type: none"> • Microeconomic conditions and economic stability • Systematic use of performance indicators and proper benchmarking • Size of investment in IS
Environmental Factors		<ul style="list-style-type: none"> • General political and economic instabilities • Tight regulation and monitoring by the CBJ • Competition • Administrative and infrastructural difficulties

9.6 Chapter Summary

This chapter has provided the discussion for the role and value of ISs as well as the attributions of the variations in those impacts. This was carried out in order to establish the contribution of this research. In addition, chapter 9 provides a summary of the key findings of the research to enhance the understanding of the role and value of ISs within the Jordanian Financial Organisations.

The following chapter presents the contribution of the research and the implications for the theory and practice of interpretive research. In addition, chapter 10 proceeds to outline the research limitations as well as detailing some of the possibilities arising for future research.

Chapter Ten

CONCLUSIONS

10.1 Introduction

This research constitutes an attempt to investigate the role and value of information systems in Jordanian Financial Organisations. The researcher gathered that suggesting a possible solution to the research problem might be facilitated through answering the following research questions which constituted a *systematic guiding basis*:

- 1- What impacts do Information Systems have in those JFOs?
- 2- To what extent is the variation in the impacts of the ISs accounted for by: more internal processes (cultural and political specific considerations), or more economically or technically rooted factors (microeconomic and/or technical variables)?
- 3- How applicable is the adoption of the interpretive paradigm to researching organisations in a developing country?

The contemplated final interpretive analysis was preceded by a two-part fieldwork. The first part was an intensive research that involved four case studies and the second part was a survey of the entire population of the JFOs. The initial analytical framework was comprehensive in order to guide the process of providing fuller pictures about the internal working orders of researched firms. In addition, a theoretical basis of the research was adopted proposing that, for a thorough consideration of the research problem one needed to look at the determinants as well as the effects of using ISs.

This chapter presents the conclusions. Section 10.2 summarises the major contributions of the research as related to understanding of the role and value of ISs. The implications for the theory and practice of interpretive research are presented in section 10.3. Complementing the delimitations of the research which were presented in chapter 1, section 10.4 covers the research limitations and the

chapter is concluded in section 10.5 with a look at the prospects for further research that could be undertaken as a direct follow up to this work.

10.2 Contribution of the Research

Based on the outcomes of the two parts of the research as described in chapters 7, 8 and the discussion and summary of findings which were presented in chapter 9, the following points summarise the major contributions of the research to the understanding of the role and value of ISs.

1. The research concluded a number of findings with some being contrary to the conventional wisdom. These findings are explained in the following paragraphs:
 - Besides the classic conclusions that ISs improved the speed of work and helped produce faster and more accurate decisions, it was also discovered that the systems themselves were not seen to have much effect on the structure or formalisation. Nor did ISs significantly affect job security or job satisfaction in those organisations. However, the systems have generally improved the productivity of operations, automated routine transactions of the account and product systems and also helped move some of the back office operations to the front office.
 - The JFOs had tight centralised controls and their ISs encouraged the decentralisation of the work but, at the same time, offered better opportunities to recentralise control especially in those cases where an on-line system was used.
 - The study revealed that the JFOs were operating in a constraining environment due to the smallness of the economy and the local competition. In addition, the central bank of Jordan was a main driver for pushing for improvements to the use of ISs in those organisations, but ironically was also criticised by some organisations as being slow in monitoring and absorbing advanced banking operations that some of those JFOs were planning to introduce.

- The research has revealed that although ISs were central to the work of surveyed organisations as the core technology, they were considered as tools or work enablers rather than weapons for competitive rivalry
 - Contrary to the general assumption that organisations do plan in advance with the aid of IS/IT, the research has revealed that in the majority of cases, strategic planning is not considered a priority and the focus was inclined towards contingency planning and crisis management. The difference amongst JFOs was more related to the type of management rather than the IS used in that particular organisation.
 - The research unravelled unexpected reactions by customers and stakeholders to the use of ISs in the JFOs. For instance, customers of JFOs were not attracted by the fact that the bank had an advanced system. They were more concerned with other facilities offered such as better credit terms and higher overdraft limits. On the other hand, the stakeholders appreciated the technological reputation that their bank was using advanced technology but they were more interested in the end of year figures. The use of ISs was not transparent to them.
 - In general, the research found that the impacts were mostly intangible and consequently difficult and problematic to evaluate.
1. Culture emerges from action and as Rosen (1991: p.6) explained 'it continuously acts back upon it as well, recreating and transforming action through the provision of meaning. To function in a setting, and to gain meaning from behaviour, culture systems are more or less internalised'. Besides the other determining factors to the impacts of ISs in JFOs, cultural and political factors were considered as prominent because they encompass a number of influential drivers that affect not only the role and value of ISs but also corporate performance. These drivers revolve around the management philosophy and included the style of management and decision making as well as the internal organisational policies towards employment and empowerment of employees, training, the evaluation and the processes of adaptation to IS. For example, employing the right people, giving them the

proper training, empowering them and maintaining regular communication with them will create conditions for achieving better results in terms of the role and value of the corporate IS. As one example, this was clearly evident in the case of Delta which is presented in section 7.5.

The conclusion was that every organisation had its unique culture which is one of the dimensions that affect the performance and use of ISs in the respective organisations and therefore contributes to explain the specificity of the impacts that result from the use of those systems. However, it was also noted that the majority of those banks were not consciously trying to nurture their own culture. This reflected that the only prevailing culture was the one created unconsciously based on the values of the top management in those organisations.

2. Another important point highlighted by Earl (1992) and found in this research is that the role and value of ISs is not linked with the technology itself but rather with the potential change to the business and the engendered opportunities. In the same vein, it follows that, as Morris and Westbrook (1996) concluded, competitive success is not an automatic result of technical innovation. As discussed in sub-section 7.5.2.1, Delta had an advanced system but that in itself was not a sufficient factor to ensure that they have a competitive edge in the short-term. On the other hand, the JFOs needed to exploit their ability to leverage information for strategic use, as found in both parts of the research (in sub-sections 7.2.2.1, 7.3.2.1, 7.4.2.1, 7.5.2.1 and 8.2.1), in order to enhance their competitive positions. Zinn (1990) emphasised the relevance of the latter points in deciding whether banks win or lose against the competition that they encounter.
3. Some Jordanian banks were using advanced technological systems (see sub-sections 7.4.2, 7.5.2 and section 8.3). Any future plans promoting on-line banking (E-commerce) and extending to cover the world-wide Web as a result of the explosive growth of the international use of the Internet, will be

problematic for those banks that do not possess the appropriate technology. This is becoming an international trend and for example, the majority of the top European banks have already installed Internet banking systems. On the other hand, apart from 4 of the Jordanian banks, all others were considered as being technologically ill equipped and will most certainly need to make a quantum leap if they intend to survive difficult working environments. The lesson here is the criticality and urgency of having to appreciate the importance of carrying out short and long term strategic planning. Naturally, the burden of meeting the requirements of this inevitable stage of electronic banking does not only lie on the shoulders of those banks but can also be seen as a joint responsibility with the Jordanian government. There are a number of obstacles that have to be dealt with. These obstacles include the poor available communication infrastructure (local telephone lines and scarce digital transmission lease lines as well as the high-cost international bandwidth), legal structure (the requirement of a legal signature on financial transactions for the purpose of identification) and the infamous backbreaking bureaucracy. However, it must be added here that if the infrastructural deficiencies are overcome in the near future, one can expect that those ill-equipped banks will suffer the consequences.

4. The research has found that economic factors were not the main drivers for attaining the intended impacts that result from the use of ISs in those JFOs. In addition, it was also found that the performance indicators for the organisations, such as the ROI, ROE and equity ratio, were not in themselves reliable pointers for demonstrating the success or failure of investment decisions in ISs. A similar point can be made about the use of the economic measures for justifying investments in ISs. Only a few of the JFOs have experimented with the use of those measures to assess such types of investments. As discussed in sub-section 8.3.2.4, only one bank reported that they had used the IRR and in another they had opted to use the NPV for assessing their investments in ISs.

5. The environmental factors (sub-section 9.3.4) such as the economic and political stability, the role of the CBJ, competition and the administrative and infrastructural problems in the commercial market were found to partially contribute towards explaining the variations in impacts of ISs between the different JFOs.
6. A prime utility of the research arises because of the dearth of studies on Jordanian organisations in general and on JFOs in particular. As explained in sub-sections 1.2.1 and 2.4.2, the Jordanian BFCS has a sizeable contribution to the GDP. The research revealed relevant issues to the organisations concerned. However, the process of studying the role and value of ISs was considered problematic because of the difficulty of gauging the usefulness of those systems and explaining the attributions behind those impacts. Therefore, arriving at one best way for looking at the role and value of ISs in organisations is almost impossible.

Consequently, this research does not present a single solution, but it can at least recommend measures that may help in improving the significance and utilisation of ISs for possibly attaining a competitive advantage in organisations. These are presented next using Porter's and Millar's (1985) generic five-step process for acquiring a competitive advantage. The list also draws on McFarlan's earlier work (e.g. McFarlan, 1984) which mapped the competitive applications of ISs onto Porter's (1980) competitive forces model. The recommendations are based on the empirical findings as reported in the thesis and constitute part of a promised report that will be presented to the participating organisations upon the completion of the research project.

- Jordanian organisations should endeavour to assess and rethink what relevant information is available in all forms.
- It is important to determine the role of IS in the industry structure on a continuous basis. Any assessment will need to understand the basis for comparison. Therefore, it is vitally important to fathom how ISs are utilised in

the industry which implies understanding the scope of coverage and intensity of information.

- Organisations have to identify and rank the ways in which ISs might create a competitive advantage. This complements what was said in the previous two points and assists in figuring out the competitive role of the systems.
- It is also useful to investigate how ISs might spawn new businesses. Part of having a competitive advantage can be thought of as having the opportunity to create new products and services as well as opening new businesses and entering new markets.
- Jordanian organisations need to develop their own plans for taking advantage of ISs. This accommodates all previous points and raises the importance of having aggregate planning that is needed to take advantage of new opportunities and capabilities.

10.3 Implications for the Theory and Practice of Interpretive Research

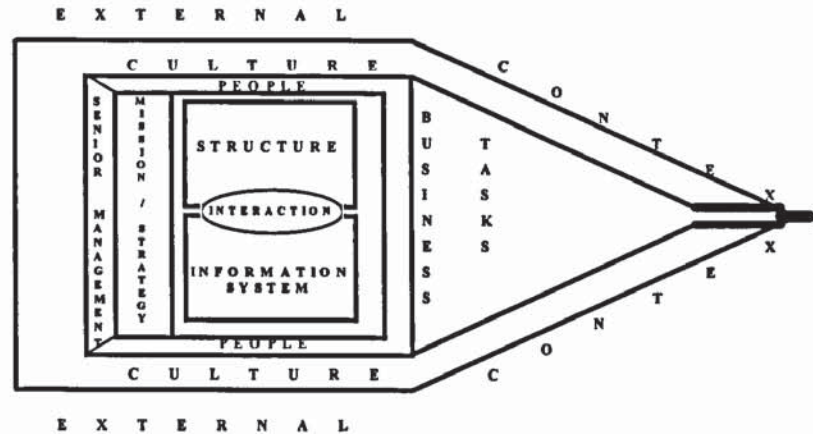
The research has a number of implications for the theory and practice of interpretive research. These are summarised in the following four points:

1- The interpretive/phenomenological paradigm as applied in this research avoided the inherent weaknesses that are traditionally associated with the interpretive paradigm as discussed by Orlikowski and Baroudi (1991). For example, much attention was paid to the consideration of inner and outer factors that gave rise to meanings and experiences. There was also an allusion to the unintended consequences of action as much as was possible. The discussion of context and process involved historical change as was envisaged relevant to the understanding of the investigated phenomenon. The researcher believes that one of the major strengths of the adapted framework was addressing those weaknesses through the multiple and diverse analyses involved. The research has, to a large extent, enhanced the understanding of the researcher about the phenomenon of the use of ISs, not only in JFOs, but also in organisations in general. This implies, as Smircich (1983) suggested, that the inherent interpretivism was insightful.

2- The research has demonstrated that the multitude of influencing and interacting factors mandate the use of a contextual method for studying the role and value of ISs. It differs from many previous studies that have focused on the impacts engendered as a result of the use of ISs. The aggregate analysis in this research focused on the impacts of ISs but at the same time it went to great length to discuss the attributions of the variation in those impacts as found out when studying the JFOs.

3- Building on the findings of the research and the spirit of other frameworks that were reviewed in chapters 3 and 5, figure 10.1 illustrates a proposed framework that can be used as a tool for carrying out empirical organisational work in accordance with the interpretive paradigm. The framework covers the context and content and assumes that it is necessary to study the whole process of change. This implies that it can be used to perform a contextual analysis of any organisational change resulting from the use of information systems. According to the framework, different dimensions have to be tackled in order to facilitate drawing a rich organography surrounding the phenomenon under investigation. These include the external context, the role of people in general and the senior management in particular, the corporate mission/strategy and business tasks as well as the interaction between the existing formal organisational and information system structures. The dimension of culture, as explained in chapter 5, is the medium for social interactions and is placed in an outer layer to indicate that culture specificity should not be relegated to a dimension of secondary importance. The idea of drawing a pointing figure was intended to reflect the sense of progressiveness. Organisations seek to achieve profitability in the short term but most importantly, they have to look ahead in order to ensure their future survivability. This also indicates that the study of organisational phenomena should consider the factors that assure the *raison d'être* for those organisations and how well they are performing in accordance with their economic objectives.

Figure 10.1: Refined Organisational Framework



4- One of the cases presented in section 7.4 (Gamma) had just undergone a merger. Looking at the role and value of IS in that case was relatively premature, as the choice of system to carry on with had not been decided. The thesis therefore reported that case based on joint analyses for the two constituting banks that were referred to as Classic and Modern. Therefore, it is concluded here that after a merger, an organisation may legally appear as one to customers but in actual fact it may continue to work as two separate business entities.

10.4 Research Limitations

The delimitations of the research were covered in section 1.5. Those were considered to be researcher-imposed limitations. However, there are other factors that lie beyond the control of the researcher but have an important influence on the findings of the research. These may have individual as well as combined effects. Some of those are related to the methodological perspective followed. The following points discuss those factors according to how they were envisaged to have affected this research endeavour.

1- King (1994) explained that *it is difficult to forecast the time of the fully absorbed technological impact*. He gave the example of the early forecasts at the adoption phase of the ATMs when they were expected to transform the banking business. It turned out that the public limited their use as only cash machines, besides the significant proportion of customers who would not use them at all. King advised

that forecasting should be limited to functionalities and capabilities. This applies to JFOs since the majority of those organisations had not completed the implementation of their systems. Therefore, one would expect that some impacts were not fully evidenced because not much time has elapsed since the inception of the technology.

2- The fact that evaluation is in itself intuitive and subjective, since it is based on the experience and perceptions of the evaluator, puts limitations on the interpreted impacts. Remarking about their experience while evaluating an IS in a bank, Neumann and Segev (1980: p. 35) stated that 'A user of information systems, especially when exposed to a prolonged use of established systems, develops a subjective evaluation of the contribution of the system to the performance of his job'. In addition, the adoption of the dialectic-hermeneutic approach for interpreting data meant that the researcher did not uncritically accept the participants' own views on the role and value of ISs in their organisations but rather attempted to critically evaluate and transform social reality (Myers, 1994c).

3- Similar to Nandhakumar's and Jones's (1997) view, the researcher emphasises the role of questionnaires as possible auxiliary interpretive instruments. This can be seen as a necessary measure for drawing rich phenomenological organographies or sectographies. Nevertheless, the survey part in this research was not short of its own problems. The use of questionnaires may complement and supplement data collection. However, it is almost impossible to apply the essence of Gadamer's (1975b) hermeneutic circle for contextually analysing data when solely using the questionnaire as the main instrument for data collection. The subtle and surreptitious influence of environmental factors is difficult to gauge by merely asking employees for their subjective opinions (Tolsby, 1998). In general, it can be said that the addition made by the survey part to what had been obtained in the first part of the research was relatively marginal. However, the survey was essential for drawing the sectoral picture. A possible alternative would have been to extend the research in the same organisations of part I by

carrying out a second longitudinal part. Although this was not possible at the time due to access problems, this in itself might have unveiled more insights about the change after some time has elapsed. The latter point is further emphasised later in this chapter as a possibility for future research.

4- Bjørn-Andersen (1988: p. 11) stated that 'However convincing, we should never allow ourselves or anyone else to canonise any single solution, any single behaviour, any single overriding ideal. We should be much more open to alternative perspectives and be prepared to let "the thousand flowers bloom"'. Heeding Bjørn-Andersen's remark, the researcher asserts that what the thesis has presented, in terms of finding and theoretical conjectures, is but one view based on the researcher's experience. This view has resulted from becoming acquainted with how different members of the organisations researched perceived matters related to the phenomenon investigated.

10.5 Future Research

The researcher concurs with Baets (1996) in considering that there is a discrepancy between the theoretical knowledge on IS issues, and the capacity to translate it into a real world application. This implies that further empirical work is needed. Walsham (1998) emphasised that more detailed micro-studies of IT in organisations are needed in order to provided evidence on how IT is implicated in organisational transformations. As a result of this research, a number of possibilities for further research have been identified. Their investigation could well form the basis for some substantially relevant research projects. These possibilities are:

1- A comparison of findings in Jordanian public share holding banks with other Jordanian-based foreign banks that presumably have different corporate cultures. The study focused on the Jordanian public shareholding companies. It would be interesting to carry out an intensive research in a foreign/Jordanian bank, such as the British Bank for the Middle East - Jordan, and compare the findings.

2- Possible revisits to banks researched in Part I for a longitudinal extension of the study. Further work in those four researched banks, after a number of years have elapsed, could be useful for studying change. This would allow for a longer time to institutionalise technology in those organisations. The case of Gamma will be especially interesting following the adoption and institutionalisation of one unified on-line and inter-branch system for the entire bank.

3- A possible extension of the study would be to cover the impacts of ISs in other Jordanian organisations. As the ISs constituted the core technology for those banks, it should be useful to compare the findings with the consequences of the use of such systems as a non-core technology in other Jordanian organisations.

4- Comparative cross-national studies to compare findings. It would also be useful to carry out empirical studies in a similar country (e.g. Lebanon or Yemen). Subsequently, cross-organisation and cross-country comparison could be made.

5- Building on the description of the Jordanian IS/IT Market as presented in chapter 2, further work is possible and indeed needed in order to arrive at more accurate and up-to-date details about such a market. It will then be possible to compare the Jordanian situation with other similar developing countries.

6- This point is not directly related to IS/IT but was realised while writing up the research. Following the discussion of Jordanian culture as presented in chapter 2, which included describing the researcher's hypothesised markings on the spectrums of Hofstede's dimensions, it was realised that further research is needed to empirically test this as the researcher is not aware of any related available research that covers this issue.

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Appendix I .

Letters to Organisations for Obtaining Access

Appendix I

LETTERS TO ORGANISATIONS FOR OBTAINING ACCESS

This appendix contains the letters that were used to facilitate access to the different organisations researched. One letter was prepared by the Director of Research at Aston Business School. In addition, two letters were prepared by the Academic Supervisor for the organisations in both parts I and II. The fourth letter was from the researcher for the organisations participating in part II only. An English translation of the Arabic version of the researcher's letter is also provided.

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السيد المدير العام المحترم ،

بنك

عمّان - الاردن

١٣ / ٢ / ١٩٩٨

تحية عطرة وبعد ،

أقوم بتحضير رسالة دكتوراة عن نظم المعلومات الادارية في المؤسسات الاردنية وقد قمت في مرحلة سابقة بدراسة عامة للعديد من المؤسسات وكذلك بدراسة خاصة لعدد منها. انني وفي هذه المرحلة الأخيرة ، بحاجة الى تكممك للايماز بتعبئة نسخ من الاستبانة المرفقة، من قبل بعض المعنيين في مؤسستكم الرشيدة تبعاً لما هو مبين في الجدول المتضمن في هذه الرسالة.

سيدي ،

اسمحوا لي بأن أذكر بانني مدرس في الجامعة الاردنية وموفد حالياً الى جامعة آستون في بريطانيا للحصول على شهادة الدكتوراة. كما أود أن ابين بأن المعلومات المطلوبة ستعامل بدرجة عالية من السرية وهي فقط لغرض اتمام بحثي الدراسي ، علماً أنني تجنبت طلب ذكر اسم الشخص الذي يقوم بتعبئة استبانة لربط الاجابات فقط بالوظيفة التي يشغلها الشخص تمشياً مع الاعتبارات البحثية. ومن الجدير بالذكر أيضاً أن البحث لن يشير الى اسم المؤسسة بالتحديد حيث أن هذا الجزء من البحث يتضمن مسحا لقطاع البنوك والشركات المالية.

سيدي الفاضل ،

سوف أقوم بأعداد تقارير موجزة متعلقة بتحليل استبانات مؤسستكم وتقديمها لكم مع توصيات دراستي العامة لكيفية تقويم نظم المعلومات في المؤسسات.

راجيا تفهمكم وشاكرا لجهودكم الخيرة ودمتم في رعاية الله وحفظه ،

رفعت عودة الله شناق / باحث دكتوراة

مدرسة استون للأعمال - جامعة آستون

بيرمنجهام - المملكة المتحدة

جدول توزيع الاستبانات على الأشخاص في مواقعهم الوظيفية المبينة / العدد الكلي للاستبانات المرفقة = ٧

المستوى / الموقع الوظيفي	عدد الاستبانات (الأشخاص)	موقع العمل	تصنيف الاستبانة
مدير عام / نائب / مساعد	١	الادارة العامة	الاولى / البيضاء
مستخدم للنظام (مدير)	١٥	الادارة العامة / الفروع	الثانية / الصفراء
مدير دائرة النظم / الحاسب	١	الادارة العامة	الثالثة / الزرقاء

The General Manager Esq.

Name of Organisation.....

Amman - Jordan

13 /2 / 1998

Best of Greetings,

I am writing a PhD thesis about Management Information Systems in the Jordanian Organisations. At a previous stage, I had carried out a general study for many Organisations and a focused study into few of them. As I am nearing the final stage of my fieldwork, I would like to request your assistance in facilitating the distribution and completion of a set of questionnaires which need to be filled by a selected number of your employees as shown in the table on the next page. Please note that the time required to fill each of the questionnaires should not take more than 15 minutes.

Sir,

May I mention that I am a lecturer at Jordan University and presently on leave to complete a PhD degree at Aston University in the United Kingdom. I would also like to point out that the required information will be dealt with confidentially and it solely serves my research endeavour. Additionally, questionnaires state that the name of respondent is not needed as the answers are to be linked to the occupied position by the respondent who would be filling the questionnaire in that capacity. The name of the Organisation will not be revealed and this part of the research covers the entire sector of Banks and Financial Companies.

Respectable Sir,

I shall prepare concise reports based on the analysis of individual cases according to responses (returned questionnaires). A copy of your Organisation's report and the general recommendations of my study for the evaluation of Organisational Information Systems will be forwarded to you at a later stage.

Hoping for you understanding and thanking your good efforts. May God take good care of you.

Rifat Odetalla Shannak / Doctoral Researcher

Aston Business School

Birmingham - United Kingdom

Distribution of Questionnaires to employees according to their positions / Total of accompanying Questionnaires = 17

Level/Position	No. of Questionnaires	Location	Type of Questionnaire	Expected Time of Completion
GM^/Ass. GM	1	HQ*	First/White	15 Minutes
User [Managerial]	15	HQ/Branches	Second/Yellow	10 Minutes
MIS!/Computer Manager	1	HQ	Third/Blue	15 Minutes

*HQ : Headquarters

^GM : General Manager

!MIS : Management Information Systems

Appendix II
Interview Schedules

Appendix II

INTERVIEW SCHEDULES

This appendix contains the Arabic and English versions of the interview schedules that were used as 'primary guidelines' for interviewing the different employees and customers of these organisations during part I.

II.1 Organisational Interview Schedule

The research involved interviewing five different types of respondents, namely: Senior Manager (SM), Middle Manager (MM), Operational Manager (OM), User (US) and Natural Group (NG). Some of the questions were common amongst the different types. The schedule indicates this accordingly by stating, after each question, which of the respondent types were requested to answer the particular question.

II.2 Customer Interview Schedule

Three customers for each of the organisation were interviewed. The Arabic and English versions are listed on the pages that follow the listing of the organisational interview schedule.

النسخة العربية II.1

جدول المقابلة المؤسسية

ملاحظة : الاختصارات المستخدمة لوظائف الأشخاص هي على النحو التالي:

مع: مدير درجة عليا، مت: مدير درجة متوسطة، مد: مدير عملياتي، مس: مستخدم، مج: مجموعة

١) التفاصيل المتعلقة بالشخص المجيب

- اسم المؤسسة، الموقع، المؤهلات، الوظيفة الحالية؟ ما هي طبيعة عملك؟ كيف يرتبط عملك بنظام المعلومات؟ [مع، مت، مد، مس، مج]
- عدد سنوات الخبرة؟ في المؤسسة الحالية؟ في الوظيفة الحالية؟ في منصب إداري؟ كمستخدم للنظام؟ [مع، مت، مد، مس، مج]
- المستوى الوظيفي تبعاً للمخطط التنظيمي؟ المدير المباشر؟ ما هي درجة تفويض استخدامك للنظام؟ [مع، مت، مد، مس، مج]

٢) التفاصيل المؤسسية

- كم عدد موظفي المؤسسة؟ [مع]
- هل يوجد مخطط تنظيمي؟ هل تعتقد بأنه مطبق؟ [مع، مت، مد، مس، مج]
- ما هي المنتجات أو الخدمات التي تعرضها المؤسسة؟ [مع، مت]
- هل حصل تقليص في عدد الموظفين؟ هل تم توظيف أعداد جديدة خلال فترة استخدام النظام؟ هل لذلك علاقة بالنظام؟ [مع، مت، مد، مس، مج]

٣) الاعتبارات الاستراتيجية والثقافية

- هل هناك خطة استراتيجية مؤسسية؟ هل يوجد خطة لعمل نظام المعلومات؟ استفسر عن الربط بين الخطة الاستراتيجية و خطة النظام، الأهداف المؤسسية، الأداء المؤسسي! استفسر عن أهمية الحصول على أحدث التقنيات! [مع، مت، مد، مس، مج]
- هل تعتمدون على تخطيط الطوارئ؟ هل هو استباقي أم عند الحاجة؟ [مع، مت]
- هل تعتقد بوجود ثقافة مؤسسية عامة؟ كيف تميز هذه الثقافة مؤسستكم عن المؤسسات المنافسة؟ هل يساعد النظام في وجود هذه الثقافة المشتركة أو المحافظة عليها هذه الثقافة المشتركة؟ كيف؟ [مع، مت، مد، مس، مج]

- هل هناك أفضلية لتوظيف أشخاص معينين لأسباب غير متعلقة بالكفاءة والمؤهلات؟ استفسر عن التمييز تبعاً للجنس! أو للأصل! أو لأية أسباب تمييزية أخرى! [مع، مت، مد، مس، مع]
- هل تشجع الإدارة العليا تقارب علاقات العمل بين الموظفين؟ كيف؟ ما فائدة نظام المعلومات في المساعدة للوصول الى ذلك؟ [مع، مت، مد، مس، مع]
- هل لعملية التدريب أهمية في التخطيط المؤسسي؟ استفسر عن التدريب على النظام والعمليات المصرفية! هل يتم التدريب في نفس الدائرة وكتيحية للاستخدام أو خارج المؤسسة! استفسر عن التعلم المؤسسي كسياسة! ما هو رد فعل الموظفين؟ [مع، مت، مد، مس، مع]
- كيف تقارن أجور الموظفين في المؤسسة مع أجور الموظفين في المؤسسات المنافسة؟ ما هي الفلسفة المؤسسية وراء ذلك؟ استفسر عن معايير تدني أو ارتفاع الأجور! استفسر عن استغلال الموظفين في العمل الزائد وإنجازهم للعمل! [مع، مت، مد، مس، مع]
- ماذا بخصوص الأمان الوظيفي؟ استفسر عن الضمان طويل الأمد للوظيفة! هل هذه سياسة عامة؟ [مع، مت]

٤) بيئة نظام المعلومات والاعتبارات الأخرى

- هل يوجد دائرة خاصة بنظام المعلومات؟ استفسر عن الشخص المسؤول عن المراقبة والتحكم في عمليات الدائرة! [مع، مت]
- كم عدد موظفي دائرة نظام المعلومات؟ مهندسين، مبرمجين، محلي نظم، مدخلي بيانات أو آخرين؟ [مع، مت]
- ما الذي كنتم تتوقعونه من النظام؟ استفسر عن أمور كمية قابلة للقياس بالإضافة للأشياء غير الملموسة! [مع، مت]
- كيف جرى تسويق الاستثمار في النظام؟ كيف تقارن ما يتم تحصيله حالياً بما كان متوقفاً؟ استفسر عن التأكد من الإنجاز والمتابعة للوصول الى الأهداف! [مع، مت]
- ما هي الأجهزة والبرامج و البنية التحتية الموجودة؟ استفسر عن أية تفاصيل فنية أخرى متعلقة بأنظمة الإدارة العامة والفروع! [مع، مت، مد]
- كيف تقيّم القدرات الفنية لنظام المعلومات؟ ماذا بخصوص شمولية وتكامل النظام؟ استفسر عن الاستخدامات الحالية! تكامل قاعدة البيانات! توفر التعامل التلقائي المباشر مع النظام! مدى التطبيق المباشر للعمليات و تكامل العمليات بين الفروع! [مع، مت، مد، مس، مع]
- ما مدى اكتمال نظام المعلومات؟ كيف ترتبط الأجزاء ببعضها؟ [مع، مت، مد، مس، مع]
- هل يوجد توثيق لنظام المعلومات؟ ماذا على سبيل المثال؟ استفسر عن الملفات الإجرائية وأية كتيبات أخرى! [مع، مت، مد، مس، مع]

- هل يتم تقويم النظام؟ على فترات متباعدة؟ استفسر عن تفاصيل التقويم! هل يحقق ذلك الأهداف المنشودة؟ ما هي أهم نقاط القوة والضعف؟ هل يعتمد التقويم على قناعة المستخدم بالنظام؟ كيف؟ استفسر عن أية طرق أخرى! [مع، مت]
- هل هناك أنظمة منفصلة لإنجاز العمل الإداري؟ مثل ماذا على سبيل المثال؟ استفسر عن التكامل مع نظام المعلومات! [مع، مت]
- هل لعبت الإدارة العليا دوراً مباشراً في تطوير النظام؟ كيف؟ [مت، مد، مس، مع]
- هل أسهم مستخدمو النظام في عمليات التصميم والتطوير؟ ما هي الطريقة؟ [مع، مت، مد، مس، مع]
- هل تحصلون على ردود فعل الزبائن؟ ماذا على سبيل المثال؟ هل هناك نقاط متعلقة بنظام المعلومات؟ [مع، مت، مد، مس، مع]
- هل كان هناك مقاومة للتغيير عندما أدخل النظام للعمل؟ كيف عملت الإدارة على معالجة هذه الأزمة؟ [مع، مت، مد، مس، مع]
- كم مضى على استخدام النظام؟ كيف جرى الحصول عليه؟ استفسر عن التفاصيل المتعلقة بالأفضليات الفنية وكيفية اتخاذ القرار! استفسر عن عملية التقويم أثناء تلك المرحلة! ما هو العمر الافتراضي للنظام؟ استفسر عن التطور التاريخي للأئمة في المؤسسة! [مع، مت]
- هل يتم تحديث النظام؟ ما هي فترة الانتظار بين كل تطوير؟ ما هي إمكانية التوسعة وكيف يتمشى ذلك مع الاستخدام المخطط؟ [مع، مت]
- كيف تتم عملية الحصول على الموافقات لتسويق زيادة الاستثمار في النظام و ذلك لعمل تحديثات جديدة؟ استفسر عن الطريقة المتبعة، مثل العائد على الاستثمار أو القيمة الحالية أو أية طرق أخرى! [مع، مت]
- ما هي ميزانية نظام المعلومات؟ كيف يتم استخدامها؟ هل تمت زيادتها خلال السنوات الماضية؟ كيف؟ هل تدخل رواتب الموظفين في الميزانية؟ كيف تقارن المؤسسة مع المنافسين في هذا المجال؟ [مع، مت]
- كيف تؤثر الإجراءات و التعليمات الحكومية على عمل وأداء نظام المعلومات؟ استفسر عن المقيدات والحوافز؟ [مع، مت]

٥) التأثيرات والمحددات

- كيف ترى نظام المعلومات الموجود و ما فائدته لعملك؟ [مع، مت، مد، مس، مع]
- ما هو الدور الذي يلعبه نظام المعلومات لتحقيق الربحية والاستقرار المؤسسي؟ [مع، مت]
- هل يقوم نظام المعلومات بتزويد المعلومات الضرورية للتخطيط والسيطرة وصناعة القرار؟ ماذا على سبيل المثال؟ ما هي النواقص؟ لماذا لا يجري التحسين للوصول الى نظام كامل؟ [مع، مت]

- ما مدى قناعتك بالنظام الموجود؟ هل تحصل على الدعم المطلوب من موظفي دائرة النظم؟ كيف تقوم هذا الدعم؟ [مع، مت، مد، مس، مع]
- ما مدى صعوبة استخدام النظام؟ استفسر عن إجراءات العمل والمتطلبات الاعتيادية و غير الاعتيادية والتأكد من البيانات و الأخطاء وأعطال النظام والتعقيدات الفنية! [مع، مت، مد، مس، مع]
- هل تغير موقعك الوظيفي نتيجة لاستخدام النظام؟ استفسر عن الخلفية التاريخية! [مع، مت، مد، مس، مع]
- هل تعتقد بأن النظام قد تسبب بتغييرات في العمل؟ مثل ماذا على سبيل المثال؟ ماذا بالنسبة للأفراد؟ استفسر عن التغييرات المتعلقة بتوزيع المهارات و القناعة الوظيفية و روتينية العمل و العبء الوظيفي و المكاسب الشخصية و الكادر الوظيفي! ماذا بخصوص نطاق الإشراف و المركزية و اللامركزية و الرسمية و الاتصالات الداخلية و صعوبة الوظائف! [مع، مت، مد، مس، مع]
- هل يقوم النظام بالدور المطلوب منه؟ استفسر عن الخطط الاستراتيجية و المساهمة لتحقيق الربحية و الميزة التنافسية و أية اعتبارات أخرى! استفسر عن الفوائد الملموسة و غير الملموسة! [مع، مت]
- هل أثر نظام المعلومات على عملية اتخاذ القرار المؤسسي؟ كيف؟ [مع، مت، مد، مس، مع]
- هل أثر نظام المعلومات على خريطة القوى المؤسسية؟ كيف؟ استفسر عن التأثير على قوة دائرة النظم! أهمية الموظفين الذي يحملون صلاحيات استخدام عالية! [مع، مت، مد، مس، مع]
- هل كان هناك تأثير على المستويات الإدارية الرسمية؟ كيف؟ [مع، مت، مد، مس، مع]
- هل تغيرت جودة المعلومات؟ كيف؟ هل تثق بمخرجات النظام؟ استفسر عن الدقة و الضبط وكذلك عن أمن و شمولية المعلومات و توفرها في الوقت المناسب! [مع، مت، مد، مس، مع]
- ما هي الهفوات و المآخذ على النظام؟ هل يخطئ النظام؟ كيف على سبيل المثال؟ استفسر عن الأسباب المؤسسية المتعلقة بالنظام وكذلك المتعلقة بالاستخدام! [مع، مت، مد، مس، مع]

II.1 English Version

Organisational Interview Schedule

1) Details related to Respondent

- Name of organisation, Location, Qualifications, Present post? What do you actually do? How do you relate your work to the IS? [SM, MM, OM, US, NG]
- Total years of experience? In the present organisation? In the present post? With a managerial role? As a user of the system? ? [SM, MM, OM, US, NG]
- Hierarchical position on the organisational chart? Direct superior? What is your level of authorisation as a user of the IS? [SM, MM, OM, US, NG]

2) Organisational Details

- How many people are employed by your organisation? [SM]
- Is there an organisational chart? Do you believe it is fully implemented? [SM, MM, OM, US, NG]
- What are the offered products or services? [SM, MM]
- Has there been a reduction in the number of employees? Any recently employed? Was this system related? ? [SM, MM, OM, US, NG]

3) Strategic and Cultural Issues

- Is there a strategic plan? What about an IS plan? Probe for linkage and dependency, corporate objectives, corporate performance! Probe for importance of acquiring latest technology! [SM, MM, OM, NG]
- Do you depend on contingency planning? Is it proactive or reactive? [SM, MM]
- Would you say that you have a corporate culture? How does it distinguish your organisation from other competitors? Does IS contribute to establishing or maintaining this? In what way? ? [SM, MM, OM, US, NG]
- Is there a preference for employing particular people for other reasons than skill and qualifications? Probe for gender type! Ethnic origin! Other discriminatory reasons! [SM, MM, OM, US, NG]

- Does management encourage togetherness and closer ties between employees? How is that? How does the IS serve to help achieve this? [SM, MM, OM, US, NG]
- Does training have a priority? Probe for IS training and banking operations training! Internal in own department or on job or external! Probe for organisational learning as a policy! What about the response of employees? [SM, MM, OM, US, NG]
- How do wages of employees compare to other competing organisations? What is the philosophy behind this? Probe for criteria of underpayment or overpayment! Probe for human exploitation and worth! ? [SM, MM, OM, US, NG]
- What about job security? Probe for full time job guarantee! Is this a general policy? [SM, MM]

4) IS Environment and Related Issues

- Do you have an IS department? Probe for who is in charge of monitoring and controlling of operations of the IS department! [SM, MM]
- How many people are employed by the IS department? Engineers, programmers, analysts, data entry, and others? [SM, MM]
- What did you expect from the system? Probe for quantifiable measures besides intangibles! [SM, MM]
- How was the IS investment justified? How has the outcome been so far? Probe for verification and follow up to achieve objectives! [SM, MM]
- What hardware, software, and infrastructure do you have? Probe for other technical details and coverage to all systems in headquarters and branches! [SM, MM, OM]
- How do you rate the IS technical capabilities? What about the system integration and comprehensiveness? Probe for applications performed! Integration of data base! Availability of interactive computing! And extent of inter-branch and on-line operational coverage! [SM, MM, OM, US, NG]
- How complete is your IS? How do parts interrelate? [MM, OM, US, NG]
- Is there any documentation for the IS? Like what? Probe for manuals containing working procedures and other handouts! [MM, OM, US, NG]

- Do you evaluate IS? How frequently? Probe for details of evaluation! Does it meet the objectives? What are the major strengths and weaknesses? Is the evaluation based on user satisfaction? How? Probe for other methods! [SM, MM]
- Are there separate systems for administrative work? Like what? Probe for integration with IS! [SM, MM]
- Did management play a direct role in system development? How? [MM, OM, US, NG]
- Have the users participated in system design and development? In what way? [SM, MM, OM, US, NG]
- Do you get feedback from customers? Like what? Is it directly related to IS work? [SM, MM, OM, US, NG]
- Was there resistance to change upon introducing the IS? How did the management deal with that crisis? [SM, MM, OM, US, NG]
- How long has the system been in use? How was it procured? Probe for details related to decision making and technical preferences! Probe for evaluation technique at that stage? What is the planned life time? Probe for the organisational history of automation! [SM, MM]
- Does the system get upgraded? How often? How about future expandability and planned usage? [SM, MM]
- How is the need for new investment in IS explained to the management? Probe for method such as ROI, NPV, or others! [SM, MM]
- What is the IS budget? How is it used up? Has it grown over the last few years? How? Are the salaries of employees included in this budget? How do you compare on those points to your competitors? [SM, MM]
- How do government regulations and directives affect the work and performance of the IS? Probe for particular restrictions and incentives! [SM, MM]

5) Impacts and Determinants

- What do you think about the used IS and how useful is it to your work? [SM, MM, OM, US, NG]
- What role does the IS play in achieving organisational profitability and stability? [SM, MM]

- Does the IS provide all necessary information for planning, decision making and control? Like what? What is missing? Why not improve by having a more complete system? [SM, MM]
- How satisfied are you with the available system? Do you get support from the IS people? How do you rate that? [SM, MM, OM, US, NG]
- How difficult is the use of the system? Probe for operating procedures, usual and unusual requests, checking data, errors and malfunctions, technical complexity, and system breakdowns! [SM, MM, OM, US, NG]
- Has your position changed as a result of using the IS? Probe for a historical background! [MM, OM, US, NG]
- Would you say that the IS introduced changes to work? Like what? What about the individual level? Probe for changes to skill distribution, job satisfaction, job routinisation, workload, personal gain, and career prospects! What about span of control, centralisation, decentralisation, formalisation, internal communication, and complexity of tasks! [SM, MM, OM, US, NG]
- Does the system play its planned role? Probe for implementation of strategic plans, contribution to profitability, competitive advantage, other considerations! Probe for tangibles and intangibles! [SM, MM]
- Did the IS affect the corporate decision making process? How? [SM, MM, OM, NG]
- Did IS affect the organisational power map? How? Probe for influence of IS department! Role of people with high level system authorisations! [SM, MM, OM, US, NG]
- Were there changes to the formal hierarchy? How? [SM, MM, OM, US, NG]
- Has the quality of information changed? How? Do you trust the output of the system? Probe for accuracy and precision, security, comprehensiveness and timeliness! [MM, OM, US, NG]
- What are the pitfalls and shortcomings? Does the IS make mistakes? Like what? Probe for reasons that are organisational related, system related, or user related! [MM, OM, US, NG]

النسخة العربية II.2

جدول مقابلة الزبون

١) التفاصيل المتعلقة بالزبون

- الاسم ، العمر، المؤهلات، عدد السنوات التي مضت و أنت زبون للبنك، المهنة؟
- هل تستخدم الحاسوب في البيت و / أو العمل؟ ما حجم استخدامك للحاسوب؟

٢) التفاصيل المتعلقة بالبنك

- ما نوع حسابك البنكي؟ هل لديك حساب واحد أم أكثر؟
- هل أنت زبون لبنوك أخرى؟ هل هناك سبب محدد لاستخدام عدة حسابات؟ هل هناك سبب محدد لاختيارك البنكي؟ ما هو الشيء الذي يميز هذا البنك؟ هل هي السمعة والشهرة أم الثقة أم الملائمة أم جودة الخدمة أم الشروط المالية التفضيلية و التنافسية أم توفر بطاقات الائتمان أم عوامل أخرى؟ كيف ترتب هذه الأمور تبعاً لأولوياتك؟

٣) التفاصيل المتعلقة بالخدمة المقدمة

- هل تقدم لك خدمة جيدة من قبل هذا البنك؟ استفسر عن الاختلاف بالمقارنة مع البنوك الأخرى
- حملة الحسابات المتعددة في بنوك مختلفة! ما هو السبب وراء ذلك؟
- ما مدى ملاءمة و سهولة سحب النقود من خلال فرعك البنكي، والفروع الأخرى؟ استفسر عن الوقت المستغرق و جودة الخدمة المقدمة!
- هل أنت مطلع على مدى استخدام الحاسوب في فرعك البنكي؟ كيف؟ هل لمست تغييراً نتيجة لاستخدام النظام؟ استفسر عن التفاصيل الدقيقة!
- هل تملك بطاقات ائتمان؟ ما مدى استخدامك لها؟
- ما مدى تأثير وجود نظام معلومات حديث و متطور في بنك ما على اختيارك لذلك البنك؟ استفسر عن المدى الفعلي للتأثير والى أية درجة!
- كيف يمكن أن يتم تحسين الخدمات البنكية المقدمة؟ هل ذلك مرتبط بالتقنيات المتوفرة؟ استفسر عن تفاصيل أكثر دقة!

II.2 English Version

Customer Interview Schedule

1) Customer Related Details

- Name, Age, Qualifications, Number of years as a customer of the bank, Profession?
- Do you use a computer at home or place of work? How extensive is your use?

2) Bank Related Details

- What kind of account do you hold? One or more!
- Are you a customer of other banks? Any particular reason for having multiple accounts? Do you have particular reasons for your choice of bank? What is different about this bank? Is it reputation, trust, convenience, quality of service, favourable competitive financial conditions, availability of credit cards, or other factors? How would you rank your order of preference?

3) Service Related Details

- Do you receive good service from your bank? Probe for difference in comparison to other banks for customers who hold multiple accounts in different banks! What is the reason behind this?
- How convenient and easy is cashing money at your branch, and other branches? Probe for time and quality of service!
- Are you aware of the use of computers in your bank? How? Did you notice any difference upon computerisation? Probe for exact details!
- Do you possess credit cards? How frequent is their use?
- How relevant is having an advanced Information System to your choice of a bank? Probe for how much is the actual influence on choice!
- How can the quality of service be improved? Would you say this is technology related? Probe for further details!

Appendix III
Questionnaires

Appendix III

QUESTIONNAIRES

This appendix contains the Arabic and English versions of the questionnaires that were used in Part II of the research as well as the list of triangulatory questions as referred to in the thesis. Three types were distributed to different vertical levels through the organisations researched, namely: senior manager, managerial users and MIS/computer manager. As stated in chapter 4, the actual questionnaires had different coloured papers. The colours were white for senior managers, orange for managerial users and blue for MIS/computer managers. However, for aesthetic considerations related to style, all final versions of both Arabic and English were produced and included in the thesis on white paper. The following pages list those questionnaires in the order (sections III 1, III. 2 and III. 3), with both the Arabic and English versions in succession. In addition, section III. 4 contains the list of triangulatory questions.

	المؤسسة
	موقع العمل
	المؤهل التعليمي
	الوظيفة الحالية
	عدد سنوات الخبرة الكلية
	= في المؤسسة الحالية
	وظيفة المسؤول الاداري المباشر
	رقم التصنيف (يعبأ من قبل الباحث)

- ملاحظات: ١ - المقياس الموضوعي المستخدم له سبع درجات حيث يمتد من ١ (غير موافق إطلاقاً/ غير موجود/متدني/غير مهم أبداً) الى ٧ (موافق جداً/مكتمل/مرتفع/مهم جداً) والمطلوب وضع إشارة صح في المربع المناسب على هذا المقياس من وجهة نظركم.
- ٢- الرجاء وضع إشارة صح في المربع المناسب حول إختياركم لأسئلة نعم أو لا.
- ٣- الرجاء عدم كتابة الاسم حيث سيتم تحليل البيانات احصائياً وكذلك محاولة الاجابة على جميع الأسئلة لتوسيع مدى الفائدة والدقة البحثية.
- ٤- أرجو كتابة أية معلومات أو ملاحظات إضافية في أسفل هذه الصفحة .

ملاحظات إضافية

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شاكراً ومقدراً تكرمكم بالاجابة

أولاً : المطلوب وضع إشارة صح في مربع الاختيار المناسب و / أو ملء الفراغ كما هو مبين :

١	متى تأسست المؤسسة ؟
٢	كم يبلغ رأس المال ؟
٣	كم يبلغ عدد الفروع ؟
٤	كم يبلغ عدد المكاتب ؟
٥	كم عدد موظفي المؤسسة؟

لا نعم

٦	هل هناك Mission Statement (MS) للمؤسسة ؟	ما هي؟
٧	هل تعتمد المؤسسة نظام تدريب معين لمستخدمي النظام البنكي؟	

٨	تعتبر المؤسسة أن ترتيبها على مستوى قطاع البنوك والشركات المالية بالنسبة للأداء هو	من أفضل ٥ مؤسسات	من أفضل ١٠ مؤسسات	من أفضل ١٥ مؤسسة	غير ذلك
				

٩	تختلف هذه المؤسسة عن منافساتها بسبب (اختيار أو أكثر)	نوعية الودائع	أنواع التسهيلات	مصادر التمويل	نوعية الإدارة	نوعية الموظفين	نوعية الخدمات	نوعية الاستثمارات	تدني كلفة الخدمات

١٠	طبيعة التخطيط الاستراتيجي المؤسسي	لا يوجد خطة طويلة الأمد	التخطيط تكتيكي مرحلي	إستراتيجي بعيد الأمد

١١	من المسؤول عن مراجعة وإعتماد خطط نظم المعلومات ؟
١٢	من هو صاحب القرار لتطوير إستخدامات إضافية للنظام؟
١٣	ما هو حجم الاستثمار الاجمالي في نظام المعلومات ؟
١٤	ما هي الميزانية السنوية التقريبية لدائرة نظام المعلومات في المؤسسة؟

١٥	كيف تقسم الميزانية (نسبة مئوية) بين	الاجهزة	البرامج	المستهلكات الدورية	الصيانة	الرواتب

لا	نعم

١٦	هل تخصص ميزانية نظم المعلومات كنسبة من العائد للسنة السابقة؟
١٧	هل تحمّل مصاريف دائرة النظم للدوائر والفروع الاخرى باتباع Chargeout System للخدمات المقدمة لهم؟

١٨	هل تعمل دائرة النظم	كمركز تكلفة (cost centre)	كمركز ربح (profit centre)

لا	نعم

١٩	هل التدريب مباشرة من خلال الخبرة و الاستخدام؟
٢٠	هل يوجد دائرة خاصة للتدريب على العمل البنكي في المؤسسة؟
٢١	كم تبلغ ميزانية التدريب؟
٢٢	هل هناك معايير وإجراءات مدونة لتسيير العمل البنكي؟
٢٣	هل يوجد خطة قصيرة الأمد لعمل نظام المعلومات؟
٢٤	هل يوجد خطة طويلة الأمد لعمل نظام المعلومات؟
٢٥	هل للمساهمين دور في قرار الاستثمار في نظم المعلومات؟
٢٦	هل هناك معيقات لتحقيق فائدة أكبر من إستخدام النظام؟
	ماذا على سبيل المثال !

٢٧	تعتبر الادارة العليا أن الاستثمار في نظم المعلومات	من المصاريف الضرورية	من الموجودات	ضرورة إستراتيجية

٢٨	علاقة المدير العام بنظام المعلومات هي	صاحب كل قرار معني	مدير جميع اللجان المعنية	عضو اللجنة العليا	ليس معنياً مباشرة

٢٩	ما هي الطرق التي تم إستخدامها لتقويم الاستثمار الأساسي في نظام المعلومات؟	فترة الاسترداد	جدوى الاستثمار	العائد الداخلي	نقطة التعادل	القيمة الحالية	طريقة اخرى ! ما هي ؟

ثانياً : المطلوب بيان درجة أهمية الاهداف التالية للتخطيط الاستراتيجي للمؤسسة آخذاً بالاعتبار دور نظام المعلومات في تحقيق ذلك :

مرتفع	متدني					
٧	٦	٥	٤	٣	٢	١

									تحقيق ربحية أعلى	٣٠
									مواجهة المنافسة	٣١
									زيادة العائد على الاستثمار	٣٢
									تحسين سمعة البنك عند العملاء	٣٣
									تخفيض المخاطر	٣٤
									زيادة الحصة السوقية	٣٥
									تقديم خدمات متنوعة ومتطورة وذات جودة عالية	٣٦
									زيادة عدد الزبائن وتحقيق الانتشار	٣٧
									الحفاظة على إستمرارية وإستقرار المؤسسة	٣٨

ثالثاً : المطلوب اختيار أنسب إجابة من وجهة نظركم للجمل الاستفسارية التالية :

موافق جداً	غير موافق إطلاقاً					
٧	٦	٥	٤	٣	٢	١

									عانت المؤسسة من مقاومة بعض الموظفين للتغيير والتحديث	٣٩
									تعتبر الادارة أن مهارات وخبرات موظفي المؤسسة تتماشى تماما مع إستخدامات النظم الحديثة	٤٠
									لقد أثر إستخدام نظام المعلومات على الهيكل التنظيمي للمؤسسة	٤١
									قلّ عدد المستويات الادارية نتيجة لاستخدام النظام	٤٢
									قلّ مستوى التعامل الرسمي بين الادارة والموظفين نتيجة لاستخدام النظام	٤٣
									عمل النظام على تقليل نطاق الاشراف للمدراء Span of Control	٤٤
									اصبح العمل البنكي روتينياً نتيجة لاستخدام النظام	٤٥
									أصبح إتخاذ القرارات مركزاً في فئة معينة نتيجة لاستخدام النظام	٤٦
									ساعد النظام في إبراز الموظفين المتميزين في المؤسسة	٤٧
									أصبح إتخاذ القرارات موزعاً بين نطاق أوسع من الاداريين نتيجة لاستخدام النظام	٤٨

موافق جداً

غير موافق إطلاقاً

٧	٦	٥	٤	٣	٢	١
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							٤٩	قلّ إستخدام الورق في المؤسسة نتيجةً لاستخدام النظام
							٥٠	يؤثر نظام المعلومات على قوة و حساسية المراكز الوظيفية في المؤسسة
							٥١	يشدد التخطيط الاستراتيجي في المؤسسة على التدريب و جدواه
							٥٢	يعتبر النظام مهماً في عمل الدراسات التسويقية
							٥٣	تؤثر تعليمات و موافقات البنك المركزي على تأثيرت إستخدام النظام في المؤسسة
							٥٤	يوجد خطة إستراتيجية مؤسسية محددة وواضحة المعالم
							٥٥	يعتمد عملي على النظام بشكل كبير
							٥٦	يوجد خطة إستراتيجية محددة وواضحة المعالم لنظام المعلومات الادارية
							٥٧	أثر النظام على عمليات تفويض سلطة صناعة القرارات لتسيير العمل اليومي
							٥٨	المعلومات التي يتم الحصول عليها من النظام شاملة و تغطي حاجة العمل
							٥٩	المعلومات التي يتم الحصول عليها من النظام دقيقة وذات جودة عالية
							٦٠	المعلومات التي يتم الحصول عليها من النظام متوفرة في الوقت المطلوب
							٦١	من المهم إشراك ادارة نظم المعلومات في التخطيط الاستراتيجي المؤسسي
							٦٢	تحافظ الادارة العليا على دعمها للنظام
							٦٣	تعتبر دائرة النظم أهم دوائر المؤسسة
							٦٤	إنني مقتنع بأداء نظام المعلومات المؤسسي
							٦٥	إنني مقتنع بالنظام وشمولية ما يقدمه لعملي
							٦٦	إن علاقة المستخدمين مع موظفي دائرة النظم جيدة
							٦٧	تتجاوب الدائرة بسرعة مع طلبات المستخدمين لعمل التعديلات المطلوبة
							٦٨	إن موظفي دائرة النظم على كفاءة عالية
							٦٩	أعتقد أنه يجب تبديل النظام بالكامل
							٧٠	إن مشاكل النظام عديدة و مزعجة
							٧١	تتجاوب دائرة النظم لادامة النظام (الأجهزة و البرامج)
							٧٢	تقدم دائرة النظم تدريباً كاملاً على النظام للمستخدمين

رابعاً : تعتبر المؤسسة أن النظام مفيد و ذلك :

موافق جداً

غير موافق إطلاقاً

٧	٦	٥	٤	٣	٢	١
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								٧٣	كبدل لتوظيف أشخاص جدد
								٧٤	للمحافظة على إستمرارية المؤسسة وإستقرارها
								٧٥	للمساعدة في بيان أهمية الموظفين نتيجة لمهارتهم في إستخدام النظام
								٧٦	لتحسين قدرة الموظف على إتخاذ القرارات
								٧٧	للمساعدة في زيادة سرعة إتخاذ القرارات
								٧٨	لاستفادة الموظف الشخصية من إستخدام النظام
								٧٩	لسهولة إستخدام النظام
								٨٠	لقدررة النظام على إفادة المستخدم من خلال إكسابه المهارات الفنية نتيجة للاستخدام
								٨١	لقدررة النظام على إفادة المستخدم من خلال إكسابه مهارات العمل المصرفي
								٨٢	لتعزيز الاتصالات الداخلية بين الموظفين
								٨٣	لزيادة الأمان الوظيفي Job Security للموظف
								٨٤	لزيادة القناعة الوظيفية Job Satisfaction
								٨٥	لأن النظام يزيد في ربحية المؤسسة
								٨٦	لايجابية ردة فعل الموظفين لاستخدام النظام في المؤسسة
								٨٧	لتعزيز قدرات المؤسسة لغرض الابتكار والتحديث
								٨٨	لتحسين كيفية وجودة العمليات المصرفية
								٨٩	لزيادة مقدار العمل المنجز من قبل الموظف

خامساً : المطلوب بيان أهمية كل من العوامل المذكورة في تقييم نظام المعلومات المستخدم وكما ترى مناسباً :

مهم جداً

غير مهم أبداً

٧	٦	٥	٤	٣	٢	١
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								٩٠	المساهمة في التخطيط المؤسسي Corporate Planning
								٩١	زيادة إنتاجية الوحدات العملية Operational Units
								٩٢	تحسين التكامل البياناتي Data Integration / Consolidation
								٩٣	المساعدة في خفض التكاليف
								٩٤	تسهيل الاتصال الداخلي بين الموظفين
								٩٥	ملائمة و موثمة النظام لاحتياجات المؤسسة

مهم جداً

غير مهم أبداً

٧	٦	٥	٤	٣	٢	١
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							٩٦	تلبية حاجة المستخدمين في المؤسسة
							٩٧	مدى تلبية النظام لحاجة الادارة لتحقيق انجاز العمل و الاشراف والسيطرة
							٩٨	تحقيق أكبر عائد يتناسب مع حجم الاستثمار في النظام
							٩٩	الزيادة المباشرة في الربحية كنتيجة لاستخدام النظام
							١٠٠	تقليل الحاجة الى الجهود البشرية لانجاز الأعمال
							١٠١	المساهمة في اكتساب ميزة تنافسية
							١٠٢	زيادة فناعة الزبائن بعمل المؤسسة
							١٠٣	تحسين الخدمات المقدمة للزبائن
							١٠٤	زيادة حجم العمل المنجز على مستوى المؤسسة
							١٠٥	تحقيق غاية وأهداف المؤسسة
							١٠٦	تحقيق التنسيق في العمل بين الادارة والفروع والمكاتب

مرة أخرى يعطيك العافية و شكراً لك

نهارك سعيد

QUESTIONNAIRE FOR MISs IN JORDANIAN ORGANISATIONS **SENIOR**

ORGANISATION	
WORK LOCATION	
QUALIFICATIONS	
PRESENT POST	
TOTAL YEARS OF EXPERIENCE	
= = = = WITH PRESENT EMPLOYER	
DIRECT SUPERIOR	
CLASSIFICATION NO. (TO BE FILLED BY RESEARCHER)	

NOTES:1- The objective scale used has seven degrees. It extends from 1 (totally disagree / not available / low / not important) to 7 (totally agree / fully available/ high/very important). It is requested that you tick a correct sign in the appropriate cell on this scale to indicate your choice.

2- Please, tick a correct sign in the appropriate cell when answering yes or no questions.

3- Please, do not write your name as your responses will be analysed statistically, and also try to answer all questions in order to increase research usefulness and accuracy.

4- Please, write any additional comments or information in the space provided below.

Additional notes

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Thanking you and appreciating your response

FIRST : Please, tick a correct sign in the appropriate cell and/or fill the space as indicated :

1	When was the organisation established?	
2	What is the paid up capital?	
3	How many branches does the organisation have?	
4	How many offices does the organisation have?	
5	What is the total number of employees?	

		YES	NO
6	Is there a mission statement (MS) for the organisation?	What is it?	

7	Does your organisation adopt a particular training programme for the users of the banking system?		
---	---	--	--

8	The organisation ranks itself as	of the best 5	of the best 10	of the best 15	other!

9	We differ to other organisations because (one or more choices)	Deposits	Offered facilities	Finance sources	Manag-ement	Empl-oyees	Ser-vices	Type of invest-ments	Low cost of sevices

10	Nature of corporate strategic planning	No long term plan	Tactical / Progressive	Long term

11	Who is in charge of reviewing and endorsing the information system's plans?	
12	Who is in charge of taking decisions to develop additional applications for the information system?	
13	What is the total gross investment in the information system?	
14	What is the approximate annual budget for the MIS department?	

15	How would you divide the budget (in percentage) between	hardware	software	consumables	maint- enance	salaries

16	Is the current MIS budget a percentage of revenues for the preceding year?	YES	NO
17	Are the MIS department incurred expenses distributed to other departments by means of a charge-out system based on rendered services		

18	Does the MIS department operate as a	Cost centre	Profit centre

19	Is training directly dependent on the personal experience and use of the information system?	YES	NO
20	Is there a special department for training employees in banking operations?		
21	How much is the budget for training?		
22	Are there written standards and procedures for running the banking operations?		
23	Is there a short term plan for operating the information system?		
24	Is there a long term plan for operating the information system?		
25	Do share holders have a role in decision making related to investment in the information system?		
26	Are there any obstacles to achieving a higher return from using the information system?	What for example?	

27	Senior management considers investment in information systems as	necessary expenditure	an asset	strategic necessity

28	The relation between the General Manager and the information system is	sole decision maker	head of all related committees	member of the most senior committee	not directly involved

29	What where the used techniques for assessing the major investment in the information system?	pay back period	feasibility study	internal rate of return	break even analysis	net present value	other ways? what for example?

SECOND : Please, indicate the importance of the following objectives to the strategic planning in your organisation, bearing in mind the role of the information system in achieving them :

low high

1	2	3	4	5	6	7
---	---	---	---	---	---	---

30	Achieving high profitability							
31	Facing competition							
32	Increasing return on investment							
33	Enhancing the organisation's reputation							
34	Reducing risks							
35	Increasing market share							
36	Offering diversified, developed and quality services							
37	Increasing number of customers and expanding							
38	stability and survival							

THIRD : Please, mark the most appropriate cell for the following statements :

totally disagree totally agree

1	2	3	4	5	6	7
---	---	---	---	---	---	---

39	The organisation has faced some resistance for change and modernisation by some employees							
40	The management of the organisation considers the skills and experiences of its employees compatible with the requirements for utilising modern banking systems							
41	The use of the information system has an influence on the organisational structure							

totally
disagree

totally
agree

1	2	3	4	5	6	7
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42	There was a reduction in the managerial levels as a result of using the information system								
43	There was a decrease in formalisation between management and employees as a result of using the information system								
44	The information system has reduced the span of control								
45	work has become more routinised as a result of using the information system								
46	Decision making has become centralised because of the introduction of the information system								
47	The information system has helped in discovering distinctive and capable employees								
48	As a result of using the information system, the decision making process has become distributed amongst wider span of managers								
49	There has been a reduction in the use of paper because of the introduction of the information system								
50	The information system influences the sensitivity and power linked with job positions in the organisation								
51	Our corporate strategic planning emphasises the effectiveness and need for training								
52	The information system is important for carrying out marketing studies								
53	The directives and approvals of the Central Bank influences the use of the information system in the organisation								
54	There is a clearly defined corporate strategic plan for the organisation								
55	My work heavily depends on the information system								
56	There is a clearly defined strategic plan for the information system								
57	The information system has affected the delegation of decision making in order to facilitate the daily operations								
58	The information system provides comprehensive information which covers all work demands								
59	The information system provides accurate and high quality information								

totally disagree totally agree

1 2 3 4 5 6 7

60	The information system may provide needed information at the right time							
61	It is important that the management of the information system department participate in the corporate strategic planning							
62	The senior management maintains full support for the information system							
63	The information systems department is considered the most important in the organisation							
64	I am fully satisfied with the performance of the current corporate information system							
65	I am fully convinced with the present information system and its comprehensiveness for my work requirements							
66	Employees have good working relations with the people in the information systems department							
67	The information systems department is quite responsive in meeting users requests to rectify problematic operational situations							
68	The employees of the information systems department are highly competent							
69	I believe the information system should be entirely changed							
70	The information system has many disturbing shortcomings							
71	The information systems department works systematically to maintain the information system's (hardware and software)							
72	The information systems department offers full user training on the use of information system							

FOURTH : The organisation considers the information system useful :

totally disagree totally agree

1 2 3 4 5 6 7

73	As a substitute for employing new workers							
74	For stability and survival							
75	To help show the importance of employees based on their skills in using it							
76	To enhance employees' ability to take decisions							

totally disagree totally agree

1	2	3	4	5	6	7
---	---	---	---	---	---	---

77	To help increase the speed of decision making							
78	To increase personal reward as a result of working with it							
79	Because of its effortlessness and simplicity to use							
80	Because it gives users benefit in adding to their technical skills and capabilities							
81	Because it gives users benefit in adding to their skills in banking operations							
82	In improving the internal communications between employees							
83	Because it helps improve the job security for the employees							
84	Because it helps increase the job satisfaction for the employees							
85	Because it increases the profitability							
86	Because the employees response to using it is positive							
87	Because it improves the organisational capabilities to modernise and innovate							
88	Because it helps improve the quality of the banking operations							
89	Because it increases the amounts of work handled by employees							

FIFTH : Please, indicate the importance of each of the stated factors to the evaluation of the your corporate information system as you think most appropriate:

not important very important

1	2	3	4	5	6	7
---	---	---	---	---	---	---

90	Assisting in Corporate planning							
91	Increasing productivity of the operational units							
92	Improving data integration and consolidation							
93	Helping in reducing costs							
94	Improving the internal communications between employees							
95	Its compatibility and synergy with organisational requirements							
96	Meeting the needs of the users							
97	Extent of meeting management needs to perform, monitor and control work							

not
 important very
important

1	2	3	4	5	6	7
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98	Achieving maximum return in proportion to the investment in the information system						
99	Direct increase in profitability as a result of using the information system						
100	Reducing the need for the human resource in order to execute work						
101	Contributing to gaining a competitive advantage						
102	Increasing customer satisfaction						
103	Improving services offered to customers						
104	Increasing work throughput						
105	Achieving organisational aims and objectives						
106	Achieving co-ordination of work between headquarters, offices and branches						

Once again, thank you for your time and efforts
Good Day

	المؤسسة
	موقع العمل
	المؤهل التعليمي
	الوظيفة الحالية
	عدد سنوات الخبرة الكلية
	= في المؤسسة الحالية
	وظيفة المسؤول الاداري المباشر
	رقم التصنيف (يعبأ من قبل الباحث)

- ملاحظات : ١- المقياس الموضوعي المستخدم له سبع درجات حيث يمتد من ١ (غير موافق إطلاقاً/ غير موجود/متدني/غير مهم أبداً) الى ٧ (موافق جداً/مكتمل/مرتفع/مهم جداً) والمطلوب وضع إشارة صح في المربع المناسب على هذا المقياس من وجهة نظركم.
- ٢- الرجاء وضع إشارة صح في المربع المناسب حول إختياركم لأسئلة نعم أو لا.
- ٣- الرجاء عدم كتابة الاسم حيث سيتم تحليل البيانات احصائياً وكذلك محاولة الاجابة على جميع الأسئلة لتوسيع مدى الفائدة والدقة البحثية.
- ٤- أرجو كتابة أية معلومات أو ملاحظات إضافية في أسفل هذه الصفحة .

ملاحظات إضافية

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شاكراً ومقدراً تكرمكم بالاجابة

أولاً : المطلوب وضع إشارة صح في المربع المناسب و كما هو مبين :

لا	نعم

١	هل هناك معايير واجراءات مدونة لتسيير العمل البنكي؟
٢	هل تعتمد المؤسسة نظام تدريب معين لمستخدمي النظام البنكي؟
٣	هل التدريب مباشرة من خلال الخبرة و الاستخدام؟
٤	هل أنت مستخدم مباشر للنظام؟

٥	أي من لجان عمل نظام المعلومات انت عضو فيها ؟	تخطيط و تصميم	استخدام	ادارة النظم	تطوير وتحديث	تقويم	لجنة اخرى ! ما هي؟
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ثانياً : المطلوب إختيار أنسب إجابة من وجهة نظركم (بوضع إشارة صح في المربع المناسب) :

موافق جداً

غير موافق إطلاقاً

٧	٦	٥	٤	٣	٢	١
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٦	عانت المؤسسة من مقاومة بعض الموظفين للتغيير والتحديث
٧	تعتبر إدارة المؤسسة أن مهارات وخبرات الموظفين متلائمة مع متطلبات إستخدام النظم المصرفية الحديثة
٨	لقد أثر إستخدام نظام المعلومات على الهيكل التنظيمي للمؤسسة
٩	قلّ عدد المستويات الادارية نتيجة لاستخدام النظام
١٠	قلّ مستوى التعامل الرسمي بين الادارة والموظفين نتيجة لاستخدام النظام
١١	عمل النظام على تقليل نطاق الاشراف للمدراء Span of Control
١٢	أصبح العمل البنكي روتينياً نتيجة لاستخدام النظام
١٣	أصبح إتخاذ القرارات مركز في فنة معينة نتيجة لاستخدام النظام
١٤	ساعد النظام في إبراز الموظفين المتميزين في المؤسسة
١٥	أصبح إتخاذ القرارات موزع بين نطاق أوسع من الاداريين نتيجة لاستخدام النظام
١٦	قلّ استخدام الورق في المؤسسة نتيجة لاستخدام النظام
١٧	يؤثر نظام المعلومات على قوة و حساسية المراكز الوظيفية في المؤسسة
١٨	يعتمد عملي على النظام بشكل كبير
١٩	أثر النظام على عمليات تفويض سلطة صناعة القرارات لتسيير العمل اليومي
٢٠	المعلومات التي يتم الحصول عليها من النظام شاملة وتغطي حاجة العمل
٢١	المعلومات التي يتم الحصول عليها من النظام دقيقة وذات جودة عالية
٢٢	المعلومات التي يتم الحصول عليها من النظام متوفرة في الوقت المطلوب

موافق جداً

غير موافق إطلاقاً

٧	٦	٥	٤	٣	٢	١
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								٢٣	تحافظ الإدارة العليا على دعمها للنظام
								٢٤	تعتبر دائرة النظم أهم دوائر المؤسسة
								٢٥	إنني مقتنع بأداء نظام المعلومات المؤسسي
								٢٦	إنني مقتنع بالنظام وشمولية ما يقدمه لعملي
								٢٧	إن علاقة المستخدمين مع موظفي دائرة النظم جيدة
								٢٨	تتجاوب الدائرة بسرعة مع طلبات المستخدمين لعمل التعديلات المطلوبة
								٢٩	إن موظفي دائرة النظم على كفاءة عالية
								٣٠	أعتقد أنه يجب تعديل النظام بالكامل
								٣١	إن مشاكل النظام عديدة ومزعجة
								٣٢	تتجاوب دائرة النظم لادامة النظام (الأجهزة والبرامج)
								٣٣	تقدم دائرة النظم تدريباً كاملاً على النظام للمستخدمين
								٣٤	تركز المؤسسة على النظام كبديل لتوظيف أشخاص جدد
								٣٥	يزيد النظام من أهمية الموظف إذا كان ماهراً في استخدام النظام
								٣٦	يساعد النظام في تحسين قدرة الموظف على اتخاذ القرارات
								٣٧	يؤدي النظام الى زيادة السرعة في اتخاذ القرارات
								٣٨	يزيد النظام من استفادة الموظف الشخصية من استخدام النظام
								٣٩	النظام سهل الاستخدام
								٤٠	لنظام القدرة على إفادة المستخدم من خلال إكسابه المهارات التقنية نتيجة للاستخدام
								٤١	لنظام القدرة على إفادة المستخدم من خلال إكسابه مهارات العمل المصرفي
								٤٢	يساعد النظام في تعزيز الاتصالات الداخلية بين الموظفين
								٤٣	يساعد النظام في زيادة الأمان الوظيفي Job Security للموظف
								٤٤	يساعد النظام في زيادة القناعة الوظيفية Job Satisfaction
								٤٥	أعتقد أن النظام يزيد في ربحية المؤسسة
								٤٦	إن ردة فعل الموظفين إيجابية نتيجة لاستخدامهم النظام
								٤٧	يساعد النظام في تحسين كيفية وجودة العمليات المصرفية
								٤٨	يعزز النظام من قدرات المؤسسة لغرض الابتكار والتحديث
								٤٩	يساعد النظام في زيادة مقدار العمل المنجز من قبل الموظف
								٥٠	إن موظفي دائرة النظم على إلمام تام بالعمل البنكي
								٥١	لقد حصلت تغييرات كثيرة على النظام منذ إقتنائه مما أثر سلباً على سير العمل

مرة أخرى يعطيك العافية و شكراً لك

نهارك سعيد

QUESTIONNAIRE FOR MISs IN JORDANIAN ORGANISATIONS				USER
ORGANISATION				
WORK LOCATION				
QUALIFICATIONS				
PRESENT POST				
TOTAL YEARS OF EXPERIENCE				
= = = = WITH PRESENT EMPLOYER				
DIRECT SUPERIOR				
CLASSIFICATION NO. (TO BE FILLED BY RESEARCHER)				

NOTES: 1- The objective scale used has seven degrees. It extends from 1 (totally disagree / not available / low / not important) to 7 (totally agree / fully available/ high/very important). It is requested that you tick a correct sign in the appropriate cell on this scale to indicate your choice.

2- Please, tick a correct sign in the appropriate cell when answering yes or no questions.

3- Please, do not write your name as your responses will be analysed statistically, and also try to answer all questions in order to increase research usefulness and accuracy.

4- Please, write any additional comments or information in the space provided below.

Additional notes

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Thanking you and appreciating your response

FIRST : Please, tick a correct sign in the appropriate cell as indicated :

		YES	NO
1	Are there written standards and procedures for running the banking operations?		
2	Does your organisation adopt a particular training programme for the users of the banking system?		
3	Is training directly dependent on the personal experience and use of the information system?		
4	Are you a direct user of the information system?		

5	Which of the information system's operational committee(s) do you sit on?	system planning and design	use of system	running of system	system development	system evaluation	other ?

SECOND : Please, choose your most appropriate answer (by ticking a correct sign) as indicated :

totally disagree totally agree

1	2	3	4	5	6	7
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6	The organisation has faced some resistance for change and modernisation by some employees						
7	The management of the organisation considers the skills and experiences of its employees compatible with the requirements for utilising modern banking systems						
8	The use of the information system has an influence on the organisational structure						
9	There was a reduction in the managerial levels as a result of using the information system						
10	There was a decrease in formalisation between management and employees as a result of using the information system						
11	The information system has reduced the span of control						
12	Work has become more routinised as a result of using the information system						
13	Decision making has become centralised because of the introduction of the information system						
14	The information system has helped in discovering distinctive and capable employees						

totally
disagree

totally
agree

1	2	3	4	5	6	7
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15	As a result of using the information system, the decision making process has become distributed amongst wider span of managers						
16	There has been a reduction in the use of paper because of the introduction of the information system						
17	The information system influences the sensitivity and power linked with job positions in the organisation						
18	My work heavily depends on the information system						
19	The information system has affected the delegation of decision making in order to facilitate the daily operations						
20	The information system provides comprehensive information which covers all work demands						
21	The information system provides accurate and high quality information						
22	The information system may provide needed information at the right time						
23	The senior management maintains full support for the information system						
24	the information systems department is considered the most important in the organisation						
25	I am fully satisfied with the performance of the current corporate information system						
26	I am fully convinced with the present information system and its comprehensiveness for my work requirements						
27	Employees have good working relations with the people in the information systems department						
28	The information systems department is quite responsive in meeting users requests to rectify problematic operational situations						
29	The employees of the information systems department are highly competent						
30	I believe the information system should be entirely changed						
31	The information system has many disturbing shortcomings						
32	The information systems department works systematically to maintain the information system (hardware and software)						
33	The information systems department offers full user training on the information system						

totally
disagree

totally
agree

1	2	3	4	5	6	7
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34	The organisation uses the information system as a substitute for recruiting new employees						
35	The information system increases the importance of the employee who is skilled in using it						
36	The information system enhances employees' ability to take decisions						
37	The information system increases the speed of decision making						
38	The information system improves the personal reward of the employee as a result of working with the information system						
39	The information system is effortless and simple to use						
40	The information system can benefit the users by adding to their technical skills and capabilities						
41	The information system can benefit the users by adding to their skills in banking operations						
42	the information system improves the internal communications between employees						
43	The information system helps improve the job security for the employees						
44	The information system helps increase the job satisfaction of the employees						
45	I believe the information system increases the profitability of the organisation						
46	The employees' response to using the information system is positive						
47	The information system helps improve the quality of the banking operations						
48	The information system improves the organisational capabilities to modernise and innovate						
49	The information system increases the amounts of work handled by the employees						
50	The employees of the information systems department are quite proficient in the banking operations						
51	Many changes have taken place since the acquisition of the information system which had a negative influence on the work						

Once again, thank you for your time and efforts
Good Day

	المؤسسة
	موقع العمل
	المؤهل التعليمي
	الوظيفة الحالية
	عدد سنوات الخبرة الكلية
	= في المؤسسة الحالية
	وظيفة المسؤول الاداري المباشر
	رقم التصنيف (يعبأ من قبل الباحث)

- ملاحظات : ١ - المقياس الموضوعي المستخدم له سبع درجات حيث يمتد من ١ (غير موافق إطلاقاً/ غير موجود/متدني/غير مهم أبداً) الى ٧ (موافق جداً/مكتمل/مرتفع/مهم جداً) والمطلوب وضع إشارة صح في المربع المناسب على هذا المقياس من وجهة نظركم.
- ٢- الرجاء وضع إشارة صح في المربع المناسب حول إختياركم لأسئلة نعم أو لا.
- ٣- الرجاء عدم كتابة الاسم حيث سيتم تحليل البيانات احصائياً وكذلك محاولة الاجابة على جميع الأسئلة لتوسيع مدى الفائدة والدقة البحثية.
- ٤- أرجو كتابة أية معلومات أو ملاحظات إضافية في أسفل هذه الصفحة .

ملاحظات إضافية

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شاكراً ومقدراً تكرمكم بالاجابة

أولاً : المطلوب وضع اشارة صح في المربع المناسب و / أو ملء الفراغ كما هو مبين :

١	هل يوجد دائرة خاصة بالنظم ؟	نعم و إسماها :	لا يوجد
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٢	متى تم إنشاء دائرة نظم المعلومات ؟	
٣	ما هو المسمى الوظيفي للمسؤول عن دائرة النظم ؟	
٤	من هو المسؤول المباشر عن مدير دائرة النظم / الكمبيوتر ؟	
٥	من المسؤول عن مراجعة واعتماد خطط نظم المعلومات ؟	
٦	ما هو حجم الاستثمار الاجمالي في نظام المعلومات ؟	
٧	كم عدد موظفي دائرة نظم المعلومات ؟	
٨	= محلي النظم ؟	
٩	= مدخلي المعلومات ؟	
١٠	= مبرمجي النظام ؟	
١١	= المهندسين ؟	
١٢	كم العدد التقريبي للحاسبات الشخصية المستقلة Stand alone PC في المؤسسة ؟	
١٣	كم عدد الوحدات الطرفية Terminals الموصولة بالنظام ؟	
١٤	ما هو عدد آلات ATM التي تعود للمؤسسة ؟	
١٥	كم عدد الفروع الموصولة On Line بالادارة ؟	
١٦	كم مضى على استخدام النظام ؟	
١٧	ما هي الاجهزة (Hardware) المستخدمة في النظام بما في ذلك الشبكة الالكترونية و البنية التحتية (للادارة والفروع) ؟	
١٨	ما هي البرامج (Software) المستخدمة في النظام ؟ (نبذة مختصرة من فضلك) ؟	
١٩	هل هناك نواقص في النظام (اجهزة و برامج) تؤثر على تكامل العمل ؟	

٢٠	هل تم تجديد النظام أو تغييره ؟	نعم ! متى كان ذلك ؟	لا
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نعم	لا
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٢١	هل هناك مراجعات وتدقيقات دورية لعمل دائرة النظم ؟
٢٢	هل يوجد خطة قصيرة الأمد لعمل نظام المعلومات ؟

لا نعم

٢٣	هل يوجد خطة طويلة الأمد لعمل نظام المعلومات؟
٢٤	هل للمساهمين دور في قرار الاستثمار في نظم المعلومات؟
٢٥	هل يوجد قاعدة بيانات Database شاملة للمؤسسة غير المعلومات المباشرة المتعلقة بحسابات العملاء؟
٢٦	هل بالإمكان الحصول من النظام على جميع التقارير التي يتطلبها سير العمل وإدارته؟

٢٧	ما هي الميزانية السنوية التقريبية لدائرة نظام المعلومات في المؤسسة؟
٢٨	كيف تقسم الميزانية (نسبة مئوية) بين الأجهزة البرامج المستهلكات الدورية الصيانة الرواتب

لا نعم

٢٩	هل تخصص ميزانية نظم المعلومات كنسبة من العائد للسنة السابقة؟
٣٠	هل تحمّل مصاريف دائرة النظم للدوائر والفروع الأخرى باتباع Chargeout System للخدمات المقدمة لهم؟

٣١	هل تعمل دائرة النظم كمرکز ربح (Profit centre) كمرکز تكلفة (Cost centre)

٣٢	هل تعرض المؤسسة واحدة أو أكثر من البطاقات التالية؟	Visa	Master card	National express	بطاقة أخرى ما هي؟

لا نعم

٣٣	هل هناك معايير واجراءات مدونة لتسيير العمل البنكي؟
٣٤	هل هناك نظام معين لتدريب المستخدمين على العمل على النظام؟
٣٥	هل التدريب بالتعلم نتيجة للاستخدام؟

٣٦	تعتبر الإدارة العليا أن الاستثمار في نظم المعلومات من المصاريف الضرورية من الموجودات ضرورة إستراتيجية

٣٧	علاقة المدير العام بنظام المعلومات هي	صاحب كل قرار معني	مدير جميع اللجان المعنية	عضو اللجنة العليا	ليس معنياً مباشرة

٣٨	ما هي الطرق التي تم إستخدامها لتقويم الاستثمار الأساسي في نظام المعلومات ؟	فترة الاسترداد	جدوى الاستثمار	العائد الداخلي	نقطة التعادل	القيمة الحالية	طريقة اخرى ! ما هي ؟

لا نعم

٣٩	هل سبق وأن تم تقويم عمل نظام المعلومات ؟		
٤٠	هل يتم ذلك بشكل دوري ؟		
٤١	هل تعتقد بأهمية عمل ذلك ؟		
٤٢	هل تستخدمون معايير إضافية اخرى للتقييم ؟		
	ما هي ؟		

ثانياً : ما درجة توفر الانظمة الفرعية التالية (بشكل كامل) في نظام المعلومات المستخدم ؟

مكتمل

غير موجود

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								٤٣	نظام الموظفين
								٤٤	نظام الحوالات الالكترونية (Electronic Fund Transfer (Via SWIFT)
								٤٥	نظام التيلير (الصندوق)
								٤٦	نظام الايداع
								٤٧	نظام التسهيلات والائتمان
								٤٨	نظام التوقيعات
								٤٩	نظام الحوالات
								٥٠	نظام الاعتمادات
								٥١	نظام الكفالات
								٥٢	نظام التعاملات بين الفروع Inter-Branch
								٥٣	نظام التقارير Reporting System
								٥٤	نظام الحزينة والمتاجرة بالأسهم والسندات
								٥٥	نظام المحاسبة المركزية
								٥٦	نظام الاستثمارات
								٥٧	نظام الكمبيوترات

ثالثاً : المطلوب اختيار أنسب اجابة من وجهة نظركم للجمل الاستفسارية التالية وذلك بوضع إشارة صح في المربع

المناسب:

موافق جداً

غير موافق إطلاقاً

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							٥٨	النظام سريع العمل حيث أن فترة الانتظار للحصول على المعلومات قليلة
							٥٩	عدد فني الأجهزة والبرامج مناسب جداً لتقديم الدعم الفني المطلوب
							٦٠	يتفهم المستخدمون عمل نظام المعلومات ويستخدمونه بالشكل الأمثل
							٦١	الموقع الجغرافي لدائرة النظم ملائم للمستخدمين من الدوائر الاخرى في المؤسسة
							٦٢	امكانية توسعة النظام متوفرة بسهولة ويسر
							٦٣	يتوافق مستوى أجهزة وبرامج النظام من حيث المستوى التقني مع فلسفة وإستراتيجية العمل في المؤسسة
							٦٤	يعتبر النظام المستخدم كاملاً لغرض إنجاز الاعمال في المؤسسة
							٦٥	النظام متكامل integrated بين الاستخدامات المتفرقة
							٦٦	تؤثر تعليمات وموافقات البنك المركزي على تأثيرات استخدام النظام في المؤسسة
							٦٧	عانت المؤسسة من مقاومة بعض الموظفين للتغيير والتحديث
							٦٨	تعتبر الادارة أن مهارات وخبرات موظفي المؤسسة تتماشى تماماً مع استخدامات النظم الحديثة
							٦٩	لقد أثر استخدام نظام المعلومات على الهيكل التنظيمي للمؤسسة
							٧٠	قلّ عدد المستويات الادارية نتيجة لاستخدام النظام
							٧١	قلّ مستوى التعامل الرسمي بين الادارة والموظفين نتيجة لاستخدام النظام
							٧٢	عمل النظام على تقليل نطاق الاشراف للمدراء Span of Control
							٧٣	اصبح العمل البنكي روتينياً نتيجة لاستخدام النظام
							٧٤	أصبح إتخاذ القرارات مركزاً في فئة معينة نتيجة لاستخدام النظام
							٧٥	ساعد النظام في ابراز الموظفين المتميزين في المؤسسة
							٧٦	أصبح إتخاذ القرارات موزّع بين نطاق أوسع من الادارين نتيجة لاستخدام النظام
							٧٧	قل استخدام الورق في المؤسسة نتيجة لاستخدام النظام
							٧٨	يؤثر نظام المعلومات على قوة و حساسية المراكز الوظيفية في المؤسسة
							٧٩	تشارك الادارة في عملية تطوير النظام
							٨٠	يوجد خطة إستراتيجية محددة وواضحة المعالم لنظام المعلومات الادارية
							٨١	أثر النظام على عمليات تفويض سلطة صناعة القرارات لتسيير العمل اليومي
							٨٢	المعلومات التي يتم الحصول عليها من النظام شاملة وتغطي حاجة العمل
							٨٣	المعلومات التي يتم الحصول عليها من النظام دقيقة وذات جودة عالية
							٨٤	المعلومات التي يتم الحصول عليها من النظام متوفرة في الوقت المطلوب
							٨٥	من المهم إشراك ادارة نظم المعلومات في التخطيط المؤسسي الاستراتيجي
							٨٦	تحافظ الادارة العليا على دعمها للنظام

موافق جداً

غير موافق إطلاقاً

٧	٦	٥	٤	٣	٢	١
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							٨٧	تعتبر دائرة النظم أهم دوائر المؤسسة
							٨٨	إنني مقتنع باداء نظام المعلومات المؤسسي
							٨٩	إنني مقتنع بالنظام وشمولية ما يقدمه لعملي
							٩٠	إن علاقة المستخدمين مع موظفي دائرة النظم جيدة
							٩١	تتجاوب الدائرة بسرعة مع طلبات المستخدمين لعمل التعديلات المطلوبة
							٩٢	إن موظفي دائرة النظم على كفاءة عالية
							٩٣	أعتقد أنه يجب تبديل النظام بالكامل
							٩٤	إن مشاكل النظام عديدة ومزعجة
							٩٥	تتجاوب دائرة النظم لادامة النظام (الأجهزة والبرامج)
							٩٦	تقدم دائرة النظم تدريباً كاملاً على النظام للمستخدمين

مرةً اخرى يعطيك العافية و شكراً لك
نهارك سعيد

FIRST : Please, tick a correct sign in the appropriate cell and/or fill the space as indicated :

1	Is there a separate MIS department?	YES and its name is : 	NO
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2	When was the MIS department established?	
3	What is the job title for the person in charge of the MIS department?	
4	Who does the person in charge of the MIS department directly report to?	
5	Who is in charge of reviewing and endorsing the information system's plans?	
6	What is the total gross investment in the information system?	
7	How many people work for the MIS department?	
8	= = system analysts?	
9	= = data entry staff?	
10	= = programmers?	
11	= = engineers?	
12	How many stand alone PCs does the organisation have?	
13	How many terminals are connected to the main information system?	
14	How many ATMs are operated by the organisation?	
15	How many branches are connected on line to the information system in the Headquarters?	
16	How many years has the information system been in use?	
17	How many hardware units are hooked to the information system including all networks and infrastructure (for the headquarters and branches)?	
18	What software is in use (please explain briefly)?	
19	Does the information system lack hardware and software, which in turn affect the integration of work?	

20	Has the information system been changed or / and modernised?	YES! When was that?	NO

21	Is there a periodic checking and auditing for the operations of the information system?
22	Is there a short term plan for operating the information system?
23	Is there a long term plan for operating the information system?
24	Do share holders have a role in decision making related to investment in the information system?
25	Is there a comprehensive Database for the organisation, other than the information related to customer accounts?
26	Is it possible to obtain all required reports as required for maintaining and managing work?

YES	NO

27	What is the approximate annual budget for the MIS department?					
28	How would you divide the budget (in percentage) between	hardware	software	consumables	maint- enance	salaries

29	Is the current MIS budget a percentage of revenues for the preceding year?
30	Are the MIS department incurred expenses distributed to other departments by means of a charge-out system based on rendered services?

YES	NO

31	Does the MIS department operate as a	Cost centre	Profit centre

32	Which credit cards does the organisation offer?	Visa	Master card	National express	other! like?

33	Are there written standards and procedures for running the banking operations?
----	--

YES	NO

		YES	NO
34	Does your organisation adopt a particular training programme for the users of the banking system?		
35	Is training directly dependent on the personal experience and use of the information system?		

36	Senior management considers investment in information systems as	necessary expenditure	an asset	strategic necessity

37	The relation between the General Manager and the information system is	sole decision maker	head of all related committees	member of the most senior committee	not directly involved

38	What where the used techniques for assessing the major investment in the information system?	pay back period	feasibility study	internal rate of return	break even analysis	net present value	other ways? what for example?

		YES	NO
39	Have you evaluated the information system in the past?		
40	Does the evaluation happen often?		
41	Do you consider the evaluation important?		
42	Do you use own metrics for evaluation?	Like what?	

SECOND : To what extent is the following sub-systems fully available in your information system :

		not available							fully available						
		1	2	3	4	5	6	7	1	2	3	4	5	6	7
43	Human Resource Management / Personnel														
44	Electronic fund transfer (Via SWIFT)														

not available fully available

1	2	3	4	5	6	7
---	---	---	---	---	---	---

45	Cash (Tiller)							
46	Deposits							
47	Facilities and loans							
48	Signatures' verification							
49	Transfers							
50	Letters of Credit (L/Cs)							
51	Letters of guarantee (L/Gs)							
52	Inter-Branch operations							
53	Reporting system							
54	Treasury and shares/bonds trading							
55	Central accounting							
56	Investments							
57	Bills and instalment guarantees							

THIRD : Please, mark the most appropriate cell for the following statements :

totally disagree totally agree

1	2	3	4	5	6	7
---	---	---	---	---	---	---

58	The information system has fast response rate with short waiting time to retrieve information							
59	The numbers of technical people is quite sufficient to offer the required technical support							
60	Users understand the operations of the information system in order to obtain optimal benefit from it							
61	The geographical location of the information systems department is convenient for users in other departments							
62	It is possible to easily expand the information system							
63	The technical sophistication of used hardware and software is compatible with the philosophy and strategy of work in the organisation							
64	The information system is completely equipped to carry out all required works							
65	There is full integration amongst the different applications of the information system							
66	The directives and approvals of the Central Bank influences the use of the information system in the organisation							
67	The organisation has faced some resistance for change and modernisation by some employees							

totally disagree totally agree

1	2	3	4	5	6	7
---	---	---	---	---	---	---

68	The management of the organisation considers the skills and experiences of its employees compatible with the requirements for utilising modern banking systems							
69	The use of the information system has an influence on the organisational structure							
70	There was a reduction in the managerial levels as a result of using the information system							
71	There was a decrease in formalisation between management and employees as a result of using the information system							
72	The information system has reduced the span of control							
73	work has become more routinised as a result of using the information system							
74	Decision making has become centralised because of the introduction of the information system							
75	The information system has helped in discovering distinctive and capable employees							
76	As a result of using the information system, the decision making process has become distributed amongst wider span of managers							
77	There has been a reduction in the use of paper because of the introduction of the information system							
78	The information system influences the sensitivity and power linked with job positions in the organisation							
79	The senior management participate in developing and modernising the information system							
80	There is a clearly defined strategic plan for the information system							
81	The information system has affected the delegation of decision making in order to facilitate the daily operations							
82	The information system provides comprehensive information which covers all work demands							
83	The information system provides accurate and high quality information							
84	The information system may provide needed information at the right time							
85	It is important that the management of the information systems department participate in the corporate strategic planning							

totally disagree totally agree

1	2	3	4	5	6	7
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86	The senior management maintains full support for the information system							
87	the information systems department is considered the most important in the organisation							
88	I am fully satisfied with the performance of the current corporate information system							
89	I am fully convinced with the present information system and its comprehensiveness for my work requirements							
90	Employees have good working relations with the people in the information systems department							
91	The information systems department is quite responsive in meeting users requests to rectify problematic operational situations							
92	The employees of the information systems department are highly competent							
93	I believe the information system should be entirely changed							
94	The information system has many disturbing shortcomings							
95	The information systems department works systematically to maintain the information system (hardware and software)							
96	The information systems department offers full user training on the information system							

Once again, thank you for your time and efforts
Good Day

III. 4 A LIST OF TRIANGULATORY QUESTIONS

USER			SENIOR			MIS		
U	S	M	U	S	M	U	S	M
*	*	*	*	*	*	*	*	*
*	*	*	*	*	*	*	*	*
*	*	*	*	*	*	*	*	*
*	*	*	*	*	*	*	*	*
*	*	*	*	*	*	*	*	*
*	*	*	*	*	*	*	*	*
*	*	*	*	*	*	*	*	*
1	22	33		1				1
2	7	34		2				2
3	19			3				3
4				4				4
5				5				5
6	39	67		6			11	6
7	40	68	2	7	34		13	7
8	41	69		8				8
9	42	70		9				9
10	43	71		10				10
11	44	72		11	5			11
12	45	73		12				12
13	46	74		13	6			13
14	47	75		14	27			14
15	48	76		15	28			15
16	49	77		16	29			16
17	50	78		17	30			17
18	55			18	31			18
19	57	81	3	19				19
20	58	82		20				20
21	59	83		21				21
22	60	84	1	22	33		23	22
23	62	86		23	22		24	23
24	63	87		24	23		25	24
25	64	88		25	24			25
26	65	89		26	19!			26
27	66	90		27	36		14	27
28	67	91		28	37		15	28
29	68	92		29	38		16	29
30	69	93		30			17	30
31	70	94		31			18	31
32	71	95		32				32
33	72	96		33		1	22	33
34	73			34		2	7	34

USER

U	S	M
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35	75	
36	76	
37	77	
38	78	
39	79	
40	80	
41	81	
42	82	
43	83	
44	84	
45	85	
46	86	
47	88	
48	87	
49	89	
50		59!
51		20!

SENIOR

U	S	M
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	35	
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7	40	68
8	41	69
9	42	70
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17	50	78
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19	57	81
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22	60	84
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24	63	87
25	64	88
26	65	89
27	66	90
28	67	91
29	68	92
30	69	93
31	70	94
32	71	95
33	72	96
34!	73	
	74	
35!	75	

MIS

U	S	M
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3	19	35
	27	36
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	29	38
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		65
	53	66
6	39	67
7	40	68
8	41	69
9	42	70
10	43	71
11	44	72
12	45	73
13	46	74
14	47	75

SENIOR

MIS

U	S	M
---	---	---

U	S	M
---	---	---

36!	76	
37!	77	
38!	78	
39!	79	
40!	80	
41!	81	
42!	82	
43!	83	
44!	84	
45!	85	
46!	86	
48!	87	
47!	88	
49!	89	
	90	
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	105	
	106	

15	48	76
16	49	77
17	50	78
		79
	56	80
19	57	81
20	58	82
21	59	83
22	60	84
	61	85
23	62	86
24	63	87
25	64	88
26	65	89
27	66	90
28	67	91
29	68	92
30	69	93
31	70	94
		95
33	72	96

Table Dictionary

- USER** (U) : User questionnaire
SENIOR (S) : Senior management questionnaire
MIS (M) : MIS/Computer manager questionnaire
 (*) : Indicates matching preliminary questions (details related to the respondent's background)
 n! : The question number followed by ! This implies that the corresponding questions were not exactly identical

Note : The **bolded** sequential number indicates the actual number of the question in the respective questionnaire