INFORMATION SYSTEMS PRE- EVALUATION PRACTICES IN CONTEXT

Fayiz Shrafat *
Faculty of Economics and Administrative Sciences
The Hashemite University, Jordan
E-mail: f.shrafat@hu.edu.jo

Abdelghafour Al-Zawahreh
Faculty of Economics and Administrative Sciences
The Hashemite University, Jordan
E-mail: zawahreh@hu.edu.jo

Faisal Al-Madi
Faculty of Economics and Administrative Sciences
The Hashemite University, Jordan
E-mail: f-madi@hu.edu.jo

Dia Zeglat
Faculty of Economics and Administrative Sciences
The Hashemite University, Jordan
E-mail: Dia@hu.edu.jo

*Corresponding Author

ABSTRACT

This paper documents an investigation of the extent to which information system (IS) pre-evaluation processes affecting the selection of such systems are influenced by the pre-existing organizational context in the Jordanian banking sector and the relationship of these processes to IS investment pre-evaluation practices. The study extends the existing knowledge in IS evaluation research by drawing on the interpretive case study to understand how pre-evaluation practices are being influenced by the developing country context of Jordan. The findings demonstrate that there are important contextual factors in all development and implementation activities that affect or frame the evaluation process. The paper also finds that more flexibility in pre-evaluation methodology would be preferable, as it would allow the innovative capacity of the actors to play a significant role in articulating the future of these practices in banking.

Keywords: IS pre-evaluation process, organizational context, contextual factors
1- IS evaluation and its context

1-1 The IS evaluation process

This study is not limited to explaining the importance of the IS evaluation process in isolation from other interrelated components. Rather, it seeks to show how IS evaluation is informed by the contextual environment in which the bank exists, to explore the external and internal components that influence IS evaluation and to examine the interactions between the factors that shape the process of IS investment evaluation (Orlikowski 1992; Mitev 2003; Chapman 2006; Stockdale and Standing 2006; Toraskar and Lee 2006). Failure to address any one of these components of the IS evaluation framework would indicate a shortcoming, since IS evaluation should be perceived as a complex social phenomenon, particularly when the process is disorganized and not clearly defined, as Marshall & McKay (2003) and Ballantine & Stray (2003) found. Indeed, changes in IS investment evaluation often take place for different reasons, so that the outcome may not be that which was expected initially.

In a study of large Australian organisations, Lin & Pervan (2001) found that they had insufficient and unsuitable evaluation processes, which constituted the most significant obstacle to effective IS evaluation. The process was mainly focused on —establishing by quantitative and/or qualitative means the worth of IS to the organisation and —bringing into play notions of cost, benefit, risk and value (Lin and Pervan 2001). Willcocks and Lester (1994) also found existing evaluation practices to be insufficient. However, there is support in the literature for the contention that capital projects are likely to provide the motivation to be more rigorous in the evaluation process and this might be generally true of capital projects rather than of IS projects (Ballantine and Stray 1999). The difficulties in conducting an effective IS evaluation will lead eventually to a complex decision-making process. Problems inherent in the context of the organisation may also prevent managers from designing an effective IS evaluation process. In fact, managers exert great efforts to overcome the difficulties associated with IS evaluation and continually seek better ways to assess IS projects (Al-Yaseen, Eldabi et al. 2004). On one hand, evaluation can be performed without any confusion or complication by using large capital acquisition models, while on the other hand it can be far-reaching and very complicated. Many decision-making models presented in the IS literature(Parker, M., Trainor et al. 1990; Clemons 1991; Bacon 1992; Hogbin and Thomas 1994; Santhanam and Kyparisis 1995; Lederer and Sethi 1996; Quaddus 1997; Lee 1998; Barua, Konana et al. 2001; Schwartz and Zozaya-Gorostiza 2003) appear to disregard the body of knowledge about decision making in general, which has mostly been accumulated outside the IS field. The rational model recognises just one prevailing force, while this study assumes that other factors determine the IS evaluation process.

These can be categorized under the construct of contextual factors, which relate to the situation in which an IS evaluation is to be made and the conditions surrounding that situation. Contextual factors are rooted in the environment in which organisations carry out their activities, setting the scene in which the process of IS evaluation is to be carried out. Other factors that are related to this context and which arise from the contextual factors are called process factors. The real evaluation and decision-making process is defined by the process construct, mainly determined by various evaluation criteria and techniques that are utilized to assess IS alternatives, in addition to the participants involved in this process and the subsequent IS decisions, the degree to which formalism has characterized the evaluation process and the level of rigour. Process factors can be classified by IT project type or size and can in turn influence content factors. Content factors, for their part, can also influence process factors and can be straightforwardly relevant to the IS investment decision under consideration. They are defined by the criteria established for the process and lead to decisions being made regarding the IS under investigation. These consist of tangible and intangible, hard and soft measures.

Hirschheim and Smithson (1999) argue that subjectivity characterises most evaluation and decision making. IS investments cannot be evaluated in quantifiable measures since there are many intangible aspects to be considered. This does not mean that quantifiable accountability should be ignored or that IS investment decisions cannot rely on hard measures, but it does mean that decision makers should allow both types of measure to be performed jointly. Serafeimidis & Smithson (1999) support this view and suggest that the current nature of IS requires a broader perspective on evaluation, taking into consideration both tangible and intangible benefits and risks. Furthermore, —The evaluation goals need to be considered in conjunction with the role that the evaluation process plays and the people
involved. The IS investment evaluation process is perceived to encompass a stage of analysis which should lead the executives to a better IS decision; when formal evaluation occurs, it will mainly be informed by conventional accountancy methods such as discounted cash flow analysis (Bernroider, N. et al. 2006). These methods, which are implemented during any organisational investment evaluation, are commonly appreciated by management, but do not precisely define the consequent benefits of IS investments (Doherty and King 2005). The tangible measures used in this process determine to what extent the rigour of the process can be relied upon, although the application of these measures will vary from one organisation to another according to many factors; namely, organisational characteristics such as size, structure and culture.

As noted above, financial methods such as NPV, ROI and PP, concerned with the expected benefits, have been considered among the main assessment methods employed in IS evaluation, but they are rarely considered appropriate or adequate; managers’ intuition, judgment and experience are often significant in informing IS evaluation, in particular when financial methods fail to take full account of costs and benefits. Farbey et al. (1999b) contend that IS evaluation must be conceived as—a process that takes place at different points in time or continuously, for searching for and making explicit, quantitatively or qualitatively, all impacts of an IS project. Smithson & Hirschheim (1998) argue that the technical aspects of IS have generally dominated evaluation, as opposed to the human, social or organisational aspects of the system. The present study examines the evaluation practices—in terms of both context and process—of a large Jordanian bank, adopting a perspective that does not distinguish between the social and the technical, but rather taking a socio-technical approach to understanding IS evaluation practices.

1-2 The context of IS evaluation
An understanding of how external and internal factors affect IS evaluation can help in characterising the present state of organisational practices, so that future research can begin to explore ways to improve the evaluation process, the measures and the quality of the inferences that serve as the foundation of any IS investment evaluation. These factors are recognised as part of the rationalisation for an IS evaluation to be made, but not every factor is taken into account. Some of these factors, whatever they are, are not acknowledged in the IS evaluation process. For a variety of reasons, these factors are hidden from all but the decision makers themselves, yet such undiscovered factors will often influence the decision and its outcomes (Heracleous and Barrett 2001). IT investments rely on the context in which they take place; therefore it is essential for the IS evaluation research field to agree terms of reference on which each organisation can base its own IT investment evaluation methodology.

The investment characteristics and the organisational environment influence the way in which the evaluation is being carried out (Huerta and Sanchez 1999). Serafeimidis and Smithson (1996) argue that

The context of evaluation may include external factors, typically beyond the control of the organization, that the organization and its members need to respond to and accommodate; for example, the national economic situation, national and local government policy, level of government support, markets and market demands, competition, supplier availability and expertise, and other environmental pressures.

This point is discussed by many contributors to the literature (Smithson and Serafeimidis 1998; Huerta and Sanchez 1999; Remenyi and Sherwood-Smith 1999; Serafeimidis and Smithson 2000; Jones and Hughes 2001; McBride and Fidler 2003; Myrtidis and Weerakkody 2008)

Organisational and external factors continuously interact with each other (Symons and Walsham 1991; Smithson and Hirschheim 1998; Stockdale, Standing et al. 2006). Among the many internal organisational contexts that are cited in the literature as influencing IS evaluation are organisational goals and strategies (Serafeimidis and Smithson 1996; Mirani and Lederer 1998; Arias-Aranda, Minguela-Rata et al. 2001; Cronholm and Goldkuhl 2003), organisational culture (Wilcock 1996; Irani and Love 2001; Pearlson and Saunders 2006), political structure (Guba and Lincoln 1989; Serafeimidis and Smithson 1996; Huerta and Sanchez 1999), organisational structure (Symons 1991; Wilcock 1992; Karake 1994; Özsomer, Calantone et al. 1997; Decanio, Dibble et al. 2000; Sarkis and Sundarraj 2000; Gallivan 2001; Love and Irani 2003; Ellinger 2005) and social structures (Wilcock 1992; Ward, Taylor et al. 1996; Jones and Hughes 2001). The external environment also affects the context; for example, an event such as globalisation (Hanseth and Bra 2000) requires IS evaluation to focus on issues beyond the control of the organisation, while the recent economic downturn and the consequent uncertainty have exerted great pressure on organisations to adopt cautious measures (Hoskisson, Eden et
al. 2000; Lalvani 2003; Bashier, Talal et al. 2007; Ershheid and Jabarin 2007). This is consistent with the literature which describes organisations as interactive and responsive to their environment. Naturally, the context should drive the content, which, in turn, directs the process. In reality, however, content and process are likely to have a two-way relationship.

Much of the time, the IS characteristics may drive the process (Farbey, Land et al. 1992). For instance, when an IT project’s benefits are obvious, the evaluation process may be optimised and confirmed. More complex evaluation techniques to examine the full consequences of an IS investment are rarely used by business managers. If a non-financial and informal method is selected to conduct the IS investment evaluation, it is very likely to be a simple one (Williams and Pollock 2008). Alternatively, when a project is vague or exhibits a high degree of risk, the process used is likely to be more deliberate and calculated. The literature refers extensively to the inconveniences linked to IS evaluation (Heeks and Stanforth 2007). These can originate from the difficulty of understanding the complex factors involved, such as the horizon and impact of the evaluation, the value of the IS and its multiple dimensions, the nature of its benefits and costs, related risks and political issues. Agarwal and Tanniru (2009) found IS evaluation to be affected by much political manipulation by stakeholders.

Fasheng & Teck (2000) argue that financial evaluation methods tend to exclude the human factor in management judgement and decision making. Evaluation decisions regarding the feasibility, relative priority and impact of these projects are very important (Smithson and Hirschheim 1998; Love and Irani 2004). The process of evaluation and deciding which projects to accept and which to reject can become very complicated. Most of the literature presented thus far focuses on outcomes related to IS decision making and evaluation, which are very closely linked (Jain, Tanniru et al. 1991; Remenyi and Sherwood-Smith 1999) without being identical (Serafeimidis and Smithson 2003). Frisk & Roztocki (2005) observe that when each stakeholder’s interests are endorsed by other stakeholders, it is more likely that the IS investment will succeed. This may be considered to be obvious, given that stakeholders will intentionally or otherwise influence the outcome of IS projects. Smithson & Hirschheim (1998, p. 164) urge “a richer approach to evaluation than a simple summing up of costs and benefits” and identify “a need to incorporate human, social and organisational aspects”. To support this argument, Ryan et al (2002) assert that IS investment will not have a favourable outcome if the social subsystems are not acknowledged, with more risk expected to accompany any such IS investment project.

The contextual dimensions direct attention to the forces within the environment which have an effect on the evaluation process. These include effects from both the internal organisational environment and the open external environment. It is normally these forces which determine why the evaluation is performed as well as who should conduct it (Serafeimidis and Smithson 1996; Stockdale and Standing 2006). A variety of reasons for performing an evaluation indicate that it can perform different roles within an organisation. Additionally, it has been documented that in many industries, the context is extremely specific and subject to inevitable change and uncertainty. It emerges that a number of factors in the environment may affect the IS investment evaluation and the eventual investment outcomes (Serafeimidis and Smithson 1999). A significant one is the political dimension, i.e. the relationships between the various stakeholders. Frisk & Roztocki (2005) studied how paying close attention to stakeholder interests may influence the selection and acceptance of IS evaluation methods. For instance, the interrelations of stakeholders as an intraorganisational issue will influence and be influenced by the evaluation process and its outcomes (Guba and Lincoln 1989; Serafeimidis and Smithson 1996; Smithson and Hirschheim 1998; Smithson and Serafeimidis 1998; Remenyi and Sherwood-Smith 1999; Serafeimidis and Smithson 1999; Jones, Hughes et al. 2001; Cronholm and Goldkuhl 2003).

There is enthusiasm for IS investments that are characterized as innovative, because such IS can be seen to provide an opportunity to reach out to new customers, introduce new products, provide better service and gain competitive advantage in other ways. Evaluation of innovative IS is often based on expectations and projections of the future without hard evidence. Sometimes, calculations of ROI are used, but these are often based on very subjective expectations. The relevant external factors are the degree of instability in the industry and the IS-related initiatives of competitors. In some cases, organisations feel competitive pressure to make certain IS evaluations (Goll and Rasheed 1997). In such circumstances, the human intention in making a decision to invest in IS is shaped by the influence of the external environment and the importance of this influence...
depends on the number of external factors which can be employed for a specific purpose. With respect to other organisational factors, business strategy has a major influence on the general intention by banks to invest in IS. Their IS strategy will be affected by the complexity of the banking environment, which may be seen as actually part of and not external to the IT decision making process. Thereby, IS strategies influence the IS investment decision making network. Hence, the IS strategy is not independent of the business strategy: there is evidence of the former being intentionally developed to support the latter (Ward and Peppard 2002; Peppard and Ward 2004).

The literature suggests that IS evaluation can be influenced by political factors as well as by the measures used in the evaluation process (Weill and Olson 1989; Farbey, Land et al. 1992; Boynton, Zmud et al. 1994; Toraskar and Lee 2006; Heeks and Stanforth 2007; Agarwal and Tanniru 2009), while political interactions depend very much on the organisational culture and structure (Robbins 1990; Pertusa-Ortega, Molina-Azorin et al. 2010). This concept of the political manipulation of evaluation practices is discussed by (Serafeimidis and Smithson 2003), whose study found that this could become a political instrument capable of reallocating power. They also found that IS evaluation cannot be delinked from its organisational context, given that it is a human driven activity. Intuition has been identified as the most prevalent force (among rationale, innovation, politics and necessity) influencing investment decisions and these have been found to be governed not only by the characteristics of the IS problem, but also by the organisational culture in which the decision is made (Butler. 1991; Wood, Wallace et al. 2004; Lee, Tan et al. 2008). There is evidence that conceptualisation decisions are often influenced by culture. Serafeimidis & Smithson (2003) contend that the failure to systemise new development in IS evaluation arises from the power of specific stakeholders and suggest that much more attention should be given to the role of stakeholders in IS evaluation. It is clear that stakeholders do not all share the same vision and goals, and that they will try to modify the IS decision-making process in order to reach outcomes which suit their particular interests (Markus 1983; Noble and Newman 1993; McLaughlin 1999; Jones, Hughes et al. 2001). Conversely, it is argued that such influence ought to be difficult to exert, since the fundamental differences in stakeholders’ interests will mean that their conflicting views have to be accommodated by compromise, according to Smithson & Hirschheim (1998). Poltrock & Grudin (1994) and Lynex & Layzell (1998) found some deficiencies in organisational structure which might hinder the successful application of acceptable design principles and prevent cooperation among business units. An innovative attitude towards IS characterises some organisational decisions, while a more rational or political IS culture characterises the behaviour of other organisations, whose members perceive IS as more of a necessity. This innovative culture may be characterised by a strong market orientation that can be enforced or enabled by information systems. The above studies indicate that to address the weaknesses identified, research needs to go beyond the evaluation method itself into the context within which evaluations take place.

2- THEORETICAL FOUNDATION
2-1- METHODOLOGY
This study uses an interpretive case study approach to look into the complexity and the dynamic character of the interrelated elements of the IT/IS investment pre-evaluation process in the Jordanian banking system. Interpretivism is defined by Neuman (Neuman 2000) as “…the systematic analysis of socially meaningful action through the direct detailed observation of people in natural settings in order to arrive at understandings and interpretations of how people create and maintain their social worlds”. The approach seeks to understand information systems development, implementation and use as social constructions (Myers 1997; 2009) and their interactions with their contexts (Walsham 1993). Epistemologically, interpretivists search for meaning in social context and would argue that the methods proposed by quantitative methodologies are both inappropriate and inadequate for investigating social phenomena (Barrett and Walsham 2004; Oates 2006).

Information systems, as Klein and Myers(1999) clearly demonstrate, gain knowledge from the reality of social constructions such as consciousness, language, shared meanings, symbols, stories, documents, interviews and other interactions which can be classified as interpretive. The context that
influences the process and the outcome is the main interest of the interpretive researcher (Harvey and Myers 1995; Klein and Myers 1999)

This study follows the IS interpretive case study approach (Walsham 1995b; Klein and Myers 1999; Barrett and Walsham 2004; Walsham 2006; Myers 2009). This choice was informed by the opportunity to: gather rich data on the phenomenon and its context (Myers, 2009), to seek in-depth understanding of the mutual interaction between IS investment pre-evaluation and broader organisational and social contexts (Walsham, 1993), and to provide contextualised understanding intersubjectively constructed between the researcher and the participants (Orlikowski and Baroudi 1991). Interpretive case study has been identified as an appropriate approach for investigating information systems in real-life context (Walsham 1995b; Myers, 2009).

2-2 Research Setting and Data Gathering

This section describes the sources of data and the ways in which it was collected and analysed. Most of the data was collected from a Jordanian bank. Some of the data was drawn from documents which were supplied by participants at the bank. These were collected while I was engaged in conducting interviews; this ongoing access to documentation provided the means to triangulate interview data with observed behaviour and evaluation process. Interviewees were staff from a cross-section of bank departments.

Gaining access to the bank presented its own challenges. Persuading individuals to participate in the study, building trust and credibility at the field sites and getting people to respond were all important access challenges. Even at the very early stages, I also needed to consider factors related to the appropriateness of the sites (Weis and Fine 2000). I tried not to take any predetermined stance that might keep me from acknowledging all dimensions of the experience that I would be witnessing. As a way of strengthening the quality of the research, multiple sources of evidence were used in collecting data. The primary sources were interviews and organisational documents. The reasons for using these two methods and their associated benefits have been discussed above. Briefly, because of the limitations of interviews as data collection tools, due to their subjective nature, other sources were used to prepare and contextualize the interpretation of this data. To facilitate data triangulation (Black 2006; Oates 2006) other data collection tools such as observation and documentation should be used where possible to strengthen the research findings. As addressing the research problem required in-depth information, data was gathered by means of semi-structured interviews, which are seen as one of the most important sources of evidence in creating a case study database.

2-3 Data Analysis

Before explaining the stage of analysing the empirical material, it is important to emphasize the interrelations between data collection, analysis and the researcher. The present researcher is an academic from a Jordanian University as well as a Jordanian national and was therefore able to understand the nuances of the culture and the environment in which he was collecting the data. Having no preconceptions of how the processes being studied operated in a bank, I needed to engage in thorough discussions of these. The analysis of empirical data took place early on and cannot be considered unrelated to data collection; it was a lengthy process of formal translation, verification, transcription and review of each interview.

The interpretive case study analysis was based on CCP interpretive contextualism concept. The evaluation context was mainly acknowledged as the main point when performing each analysis. As a result all other interviewee that involved in the evaluation process and their consistent actions which arose between them were chased. These interviewees subsequently became the next point of analysis from which following related interviewees and actions were chased. The process went on until nearly most interviewee saturation point was reached such that further chasing stopped given that no more new interviewees were identified. The concept of outer context from CCP interpretive contextualism (Avgerou 2001; Stockdale and Standing 2006) was drawn upon to situate the study in its broader national and socio-technical environment.
3- RESEARCH FINDINGS

3-1 Initial stage: Scanning the business environment

The research project described in this thesis aimed to investigate the state of IS evaluation practice in the Jordanian banking sector and the influence of the local and wider banking environment on the conduct of IS pre-evaluation. This section begins a close examination of the pre-evaluation process with its initial stage. In order to produce possible ideas for IS investment it was the responsibility of a range of business units at CRBA to inspect the business environment and recognise any new opportunity. On the other hand, the organisational context would provide the information necessary to enable choices to be made about the evaluation approach and the scope of the assessment. It would also provide guidance on the selection of an approach suitable for the organisational situation and the requirements for evaluation. This would be recognised on the basis of the evaluator’s judgment of the level of influence of the organisational context. In this sense, some would argue that the organisational context in which the bank performs its functions plays an important role by destabilising the IS investment network if new IS investment is seen by its stockholders as unable to influence the bank's progression significantly. From this viewpoint it could be said that if the bank were seen to enjoy too little growth, the new IS investment would not justify its cost, as it would not pay back the investment in due time. CRBP1 put it simply:

Even though we know the high value of IS, if we cannot justify the investment in terms of payback, nothing will convince the board to bring it in.

Poor growth in the banking operation might be related to the business environment. Some interviewees felt that the situation of the business and the market as a whole implied that investment in new technology was not necessary for the bank to fulfil its functions. The focal actors should take contextual factors into account and whenever possible take advantage of them to establish stronger connections between IS investment and its evaluation. For example, as CRBP6 stated, the economic downturn had forced the bank to take precautions that limited its ability to compete:

The banking industry has been exposed to particularly difficult circumstances this year due to the global financial crisis, which has forced banks to adopt cautious policies.

Another factor related to the character of the banking industry and which influences the kind of technology that needs to be invested in is the existence of indicators concerning the current and future economic situation. Interviewees considered this crucial to the bank's ability to handle new product development, improved time to market and customer satisfaction, given the need for technology of a high standard in order to fulfill its obligations. This was emphasised by CRBP13:

Indicators about future economic situation could guide the bank tendency toward what kind of IT investment is required and alert those of what measures should be taken to meet the future business requirements. The banking industry in Jordan witnessed a high turnout of financial institutions in recent years; this increased the intensity of IS investment among banks to their obligations.

Organisational factors such as the bank’s strategies appeared to be guided mainly by principles that worked to enhance its IS investment. CRBA was well aware of the possibility of the positive changes that IS investment might bring, if a clear IS strategy were to be followed to achieve the desired goals of growth and prosperity. In support of this view, CRBP18 said:

Technology is totally altering the way the bank can operate and provide services, and to that effect, we are leveraging on the existing development vision to provide the bank with a clearly defined information technology strategy that achieves its goals, ambitions and a plan for more growth.

The speed of change and complexity in the banking environment, where IT is used to gain business value, will eventually have an impact on IS strategies, which are in reality part of and not external to the IS pre-evaluation network. Therefore, in that network, strategies regarding IS must be seen as an effect of the network. CRBP4 introduced the parameters of speed and complexity:

The speed of change and complexity of the business environment made us rethink our IT strategies. We needed IT software that would support our business process in this rapidly changing environment.

The IT department and the business areas had to come together in regular meetings of people with relevant experience in order to guarantee that adequate collaboration took place and that the two parts were in harmony, so that the investment proposals were justified as both technically realistic and practical from a business perspective, as will be illustrated in later sections of this chapter, dealing with
the subsequent stages of IS evaluation at CRBA. However, irregular representation of some business areas in these meetings was noticed by other partners, as CRBP8 made clear:

*In order to have efficient IT decisions you need to have experienced business and IT people who are aware of the bank’s environment, goals, strategies and mission, because that will facilitate creativity in decision making. However, some business departments were often not interested in participating in this.*

Business and IT people must have an understanding of what their bank is about, that is, the current banking situation in which technologies are adopted, implemented and used.

At the broad overview level, knowledge of the bank by the stakeholders implies knowing its goals and objectives, its core capabilities. Knowledge about the bank must include knowledge about its environment and the constraints imposed on it by its rules, government regulations and the emergence of prominent IT-specific competition. According to CRBP6, structure was important:

*The new structure of the bank has made it possible to facilitate IS evaluation through new banking practices, based on a new definition of activities to achieve better performance and demonstrate best practices.*

Thus, CRBP6 made it clear that the establishment of a new organisational structure provided the necessary foundation for the bank to integrate the efforts of business and IT people to achieve its strategic goals. The structure of the organisation was introduced as another factor that would play a significant role in facilitating the enrolment of other actors in the network. Designing an organisational structure involved the incorporation of best banking practices, based on clearly defined authorities and responsibilities, effective performance and support for certain activities. This required the establishment of new specialized divisions, the merger of some duties, and dividing others in order to work efficiently. The organisational structure supported the IS evaluation network as it emerged, aligned different actors’ interests so that they would become aware of each other’s goals, and set up the tasks required to attain the bank’s strategic goals. Organisational structure is seen to be a significant and very substantial actor in the IT/IS evaluation process, influencing decision making, involving the stakeholders and becoming more effective in pursuing other stakeholders of IT investment. The new structure would stabilise the network and make it grow so that it would be able to define what is real. Organisational structure can be realised as an actant as long as it has the ability to influence the network and to make a difference when exerting an impact (actancy) on the network.

CRBP14 had this to say about strategy:

*The IS strategy adopted by the bank has acknowledged the importance of the effect of IT on the current business practices and an awareness of suitable IS investment in the future plans.*

The existing IS strategy of the bank was a crucial factor in influencing IS investment, requiring stakeholders to consider where the new system would fit in, enhancing the bank’s practices, and how it would contribute to the banking products and to cost reduction. Was there any possibility that the adopted IT would facilitate the integration between the products of the bank and the existing business practices? The bank was worried about what could be achieved by adopting IT in accordance with its prevailing standards. There was a very clear need to construct a convincing IS proposal for any IT investment to be considered.

According to CRBP1, rapid evolution was another consideration:

*The evolution of banking solutions based on IT made it very hard to adopt them and cope with the increasing speed of IT development.*

While IT was undeniably useful in all its aspects, participants believed that the increasingly rapid development of IT systems being used by the banks had led to an understatement of the value of IT in the perception of some of the important actors. Others might see that the relentless evolution in IT would have a great impact in convincing actors to enrol and help in creating a new actor network that would make IT/IS evaluation smooth and simple, as they would appreciate the power of IT investment to enhance the bank’s performance. However, IT systems are not unique and can be replicated by competitors. CRBP5 therefore referred to the need to act opportunistically:

*We don’t adopt IT on a fixed schedule, as a mandate, or when a new system comes out. We do that based on our need to promote new opportunities.*

IT investment strategy was not governed by a systematic plan to acquire technology according to a fixed schedule; rather, it was seen as a solution for new problems or a corrective which must be
implemented in order to stay in the market or to seize an opportunity. CRBP3 viewed IT investment as a necessity from a business survival standpoint:

*Banks live and die by IT and we’re a bank. Our bank would die if we didn’t have IT facilities for a day. It would make our business impossible to run.*

The banking culture acknowledges that there is a huge difference between what can be considered optional in terms of IS investment and what must be seen as a necessity. The prevailing culture holds that IT should not be implemented simply because the technology is state-of-the-art. Instead, IT investment must develop the banking business in some way. IT is a tool that permits a bank to achieve its business goals. According to CRBP5:

*We need to foster innovative culture, such as mobile access to the financial accounts and statement etc.; IT has already made it possible to execute operations in such a wonderful way, but still we need more of IT to face the upcoming challenges.*

One reason for IS investment evaluation being such a crucial element of banking practice is that it ensures that the adoption of any new technology will be capable of enabling the bank to face competition from other organisations in the market. Otherwise, the proposed IS investment would add nothing to the bank’s ability to maximise its market share, revenue and customer satisfaction by enhancing its services and products. Thus, CRBP6 stated that:

*Competition pressure, revenue and customer satisfaction play a significant role, with the desire to gain competitive advantage and bigger market share too.*

Another participant, CRBP17, made similar remarks concerning the significance of IS investment and its effect on the bank’s position in the market in terms of competition, revenues and customer satisfaction:

*Competition, generating revenues, customer satisfaction and increased market share need to be handled in a very professional way, which demands high quality IT solutions.*

The nature of the banking industry placed the bank in a very competitive market. As a component of the external environment, competition had a strong influence on the IS evaluation process in terms of what to expect from its IS investments. Stakeholders would try to link this factor to strengthen the evaluation methods and procedures to ensure better justification of investments. In the past years, CRBA had enjoyed sustained success, but despite a growth in sales, the bank reported a reduction in its net profit before tax, which declined in 2009 to JD 97 million from 142 million in 2008. The bank had identified two major external factors leading to this reduction: unprecedented import competition and the financial crisis. Major IS evaluation process had to be carried out as a result of this external pressure.

Another factor which has to be mentioned here is an IT-specific one identified by CRBP13:

*By the time we discovered that the system that had been adopted by the bank was not functioning properly, the losses were huge in terms of the expense, the time that was consumed in implementing the system, training the staff and the opportunities that have been missed to date.*

The characteristics of the technology often appeared to influence IS investment and its evaluation. On one hand, evaluation was performed to justify the strong expectation of improving the technical efficiency of the various aspects of the banking operation and services, as perceived by the department which had proposed the IS investment; if there were negative outcomes, such as a deficient performance of the technology, this would risk harming the bank’s position in the market by causing financial losses. On the other hand, IS investment could damage the bank’s ability to meet a significant financial burden, which was a negative factor in that it encouraged the finance department to resist claims of a constant need to update the systems. If such resistance amounted to a firm refusal to back a proposed investment, this would tend to destabilise IS development and perhaps cause an investment project to collapse. Thus, there was a strong possibility that such concerns would influence IT investment decisions. CRBP21 explained:

*We had this solution from an international banking organisation but the cost of the constant need for maintenance was very high, which in turn made the finance department insist that we revise our strategy and buy a new system at the same cost as the maintenance of the old system. Regarding the cost, the finance people always have the final say, since they are an essential part of every investment decision.*
This indicates that despite a growing acknowledgement inside the IS evaluation field of the restrictions and imperfections of the positivist approach, the tendency towards an interpretivist understanding has had little impact on organisational practice. Yet the financial significance of new IS investment was seen to have a decisive effect on IS evaluation. Indeed, CRBP17 explained that low-cost investments could be made without formal pre-evaluation:

*Low budget systems have a different path of justification that depends totally on the IT department. It can approve any project within the limits of its departmental budget.*

This participant went on to explain that where the cost of a project was below a certain limit, the expense of the formal IS evaluation process itself could not be justified, so no such evaluation would be conducted and the decision would most often be taken on the direct authority of the IT department. Another interviewee made a roughly similar point:

*The Jordanian market is small and the bank’s needs in order to serve its customers are obvious. Therefore, IS investment sometimes does not need to go through a long pre-evaluation process. It is only justified when you are dealing with strategic systems and infrastructure.*

This contributor added that another circumstance where an IS investment would not need to be evaluated formally was where it was made in response to a government regulation; pre-evaluation would serve no purpose if the adoption of the system was mandatory.

While it is true that the Jordanian market is small from one point of view, on the other hand it is important from a regional point of view, so some IS development and deployment of new technology is often likely to be needed. Thus, CRBP18 said:

*The Jordanian banking sector is one of the best in the region. In order to keep that position we need to be always ahead of the others.*

A related point was made by CRBP9, who emphasised the need to proceed quickly with some investments:

*Time consumed in the evaluating process and implementing the system might result in making the desired IS out of date.*

The point being made was that by the time the system was updated and developed as scheduled, the interest of the bank in that particular IS might have been superseded by the need for an alternative system, to which the bank would now turn its attention. It was true that the bank had experience of operating many IT systems, but this would not prevent it from considering new systems deemed to be essential to enhance its performance. CRBP5 raised a related point:

*Many technological factors affect our IS evaluation regarding IT systems. The current IT situation and architecture need to support our flexible and fast integration with other systems operating in the bank. The situation demands more professional and technical service enhancement.*

This issue is related to the interoperability and compatibility of the system itself: whenever a legacy system is being updated, expanded or replaced, there is a risk that its functionality might be such that it would be unable to perform properly and integrate with the new system. As a technological factor this might influence decision makers negatively. CRBP3 raised another aspect of integration:

*Technological maturity, how the newly adopted system would cope with the intended growth and expansion within the bank, what kind of attribution the new system would contribute to the banking products... Cost would be considered a big issue. Would it facilitate the integration between the products of the bank and the existing business practices? IT has to achieve the efficiencies needed while acting in accordance with prevailing standards of the bank. The opinions of other users of the system are very influential factors.*

In most circumstances these contextual factors were said to have an impact on IS evaluation. Interviewees stated that certain factors required the bank to perform formal evaluation. In some cases the type or value of the technology adopted did not require an IS evaluation to be performed in order to guide the decision as to the system’s implementation. The banking environment was seen to be changing rapidly, as were the demands on the bank in the face of change; the old systems were not able to meet the new requirements. Where a new system was seen to be the answer, as a rapid response was required, IS evaluation was considered. In some circumstances there was no need to perform a pre-evaluation, while in others a formal evaluation was required.
4- DISCUSSION

4-1 Socio-technical view of IS investment evaluation

Given that IS research contributes to both theory and practice (Benbasat and Zmud 1999), practitioners need to understand not only how IS investment proposals emerge and are formed, but also why the evaluation process is conducted in a particular way and not others (the fashion of IS evaluation), who conducts it and what needs to be measured. Thus, the implementation of IS evaluation is a very complex process, a socio-technical phenomenon which can be understood in different ways, depending mainly on the context of the organisation in which the evaluation takes place (Lyytinen 1987; Symons and Walsham 1991; Doherty and King 2005; Gunasekaran, Ngai et al. 2006; Marchewka 2006). This is exactly what this research seeks to clarify. Although traditional IS evaluation techniques are widely accepted as justifying IS investment decisions, one finding of this study is that applying these techniques overlooks certain social issues in IS evaluation. The determinism and objectivity that characterise these techniques and ways of picturing the phenomenon fail to incorporate the comprehensiveness of IS evaluation. In other words, such deterministic techniques tend to obscure the complexity of IS evaluation, which needs to be tackled from a socio-technical point of view.

IS evaluation practice is a set of socio-technical components comprising the ideas, information, styles, language, stories, text, figures, images and documents that network actors share. When they function well together an IS evaluation makes an ideal knowledge structure, a social structure that can assume responsibility for developing and sharing knowledge among human actors. Furthermore, to look beyond the socio-technical aspect of IS evaluation, where the local context is the main concern, a contextual approach is suggested to comprehend more insightfully the wider context of the phenomenon. This suggestion is supported by authors who argue that a contextual approach will lead to an improved understanding of the social, cultural, political and economic factors that are engaged in carrying out such IS evaluation (Orlikowski 1992; Mitev 2003; Chapman 2006; Stockdale and Standing 2006; Toraskar and Lee 2006; Heeks and Stanforth 2007; Agarwal and Tanniru 2009).

In the present research, the result of a complex unpacking process that aimed to understand IS evaluation practice has resulted in a better contextual understanding of it, which in turn helps to confirm its socio-technical nature. It also confirms the argument of certain authors (Orlikowski 1993; Herrmann, Hoffmann et al. 2004; Kearns and Lederer 2004; Luna-Reyes, Zhang et al. 2005) that such phenomena should be investigated contextually, taking into account the interplay among external and internal contexts. Many researchers have conceptualised IS evaluation by modelling the making of large capital acquisition decisions along with financial and economic criteria that include the main tools to be used in IS evaluation. Here, unpacking the experience of a Jordanian bank (CRBA) has demonstrated clearly that viewing evaluation as a holistic process (context, content and process) for evaluating information systems will lead to an improved understanding of how it is conducted, why it is conducted in this way, who conducts it and what needs to be measured, as confirmed by the work of (Stockdale and Standing 2006). This means that the IS evaluation process will not be influenced merely by the technical aspects of the organisation, such as its IT infrastructure and platforms, but also by the organisational structure, culture, business processes and the people involved, all of which will affect the way in which investment decisions are taken. Thus, such phenomena should be viewed as socio-technical events, not as exclusively technical artefacts.

Indeed, it is evident from the previous chapter that IS evaluation at CRBA was shaped and influenced by a range of factors, both technical and non-technical. Although these are impossible to delineate and comprehensively determine in advance, this is not the main issue, which lies instead in their dynamic nature. In other words, the analysis brings the realisation that the factors investigated here acted and interacted differently according to the conditions and the context within which they operated. Thus, these factors can be said to constitute a ‘black box’ of IS evaluation, affecting the process unpredictably and uncontrollably in ways which were difficult to identify, so that it was not easy to understand their order or behaviour during any of these interactions. For
instance, during the analysis which aimed to unpack the black box of IS evaluation, some organisational and political factors, part of the internal context, were observed to be significant in driving and shaping the evaluation process, thus influencing IS decision making (Serafeimidis and Smithson 2003; Lee, Tan et al. 2008). At the same time, certain technological factors also played a major role in shaping the evaluation process.

Accordingly, the process is evidently socio-technical and the findings of this research support the claims of some authors that there should be a shift in the view of IS evaluation from the rational model to a more socio-technical perspective (Remenyi, White et al. 1997; Remenyi and Sherwood-Smith 1999; Irani and Love 2001; Verville and Halingten 2002; Berghout and Remenyi 2005; Klecun and Cornford 2005; Stockdale and Standing 2006; Ward and Daniel 2006). On the other hand, Hamill, Deckro et al. (2005) have developed a methodology facilitating the generation of information assurance strategies and implementing measures to assess the process of selection. Irani et al. (2002), from the perspective of financial performance measures, find the evaluation of IS in terms of costs and benefits to provide an advantageous level of economic justification. Kauffman and Wang (1994) offer an econometric analysis of a precise kind of interorganisational system and identify features that are likely to influence the perceived business value of network membership, leading to early IS investment. This entails a need to pay more attention to detail when evaluating IS. Accordingly, in order to gain a deep understanding during such evaluation, these phenomena that are shaped by forces of a socio-technical nature must be examined as processes in the form of actions, reactions and interactions in both external and internal contexts, as argued by researchers such as (Trauth 2001; Wagner and Newell 2004; Doherty and King 2005).

As stated in chapter one, the aim of this study is to identify the important internal and external factors that influence IS investment evaluation practices. As the fieldwork approached its end, it was apparent that interviewees perceived the contextual factors affecting the IS evaluation practice in CRBA as dynamic in nature. In fact, it was notable that the extent of their influence on IS evaluation changed according to the continuous interactions between the bank and the various elements that constituted the business environment, as well as those among these elements. As time passed, these changes in the degree of effect on this relation were also influenced by other unpredictable and uncontrollable factors, resulting in a new perception of IS evaluation practices. Indeed, one of the findings of this study is that these factors influenced not only the IS evaluation but also the degree of formality with which IS evaluation was carried out, how it was conducted, why it was conducted in this way, who conducted it and what needed to be measured. Thus, perceptions of the IS evaluation process can be seen not to arise fully formed but rather to develop cumulatively with time. This contradicts (Hallikainen and Chen 2005), who found no important unexpected changes in the business environment that would have caused a significant modification of IS investment evaluation. They also found that evaluation did not cause any major changes in IS investment planning.

This study has made it clear that one of the issues in IS investment evaluation practice concerns the linkage between the evaluation process and the organisational context in which the bank operates. In this regard, as the main tool of IS evolution, this study takes the IS proposal to embody the link between the interests of different actors that were themselves influenced by the said contextual factors. In other words, the interests of human actors in the IS proposal inherit the context within which the investment evaluation is situated. Actors who work within the norms, rules and conventions of an organisation are not behaving without interest; rather, they are reinforcing IS evaluation.

4-2 Initial stage: Scanning the business environment

Based on the understanding of the IS evaluation practices in the western banking industry cited in the literature, some bankers in the developing world would argue that since they seek to achieve more or less the same benefits from IS investment, they would assume that the same evaluation practices would work as well there as they have worked for banks in the western world. The focal actors in the evaluation process assume that since the technology in question was produced in the west it would be advisable to use the same evaluation processes, although more attention should be given to the context in which the IS investment is being made. Approaching information systems as socio-technical entities in research requires consideration of the role of context (Avgerou, 2001;
For example, the deficiencies of the legal framework for dealing with security issues affecting e-commerce and the lack of appropriate infrastructure meant that a suggested IS investment fell short of the expectations of decision makers.

The first research question required the author to go beyond the local context of the IS evaluation actor networks at CRBA to the broader banking environment in Jordan. To understand any such complex phenomenon it is essential to take a panoramic view that is not restricted to the local context of the process itself but extends to the external context of the organisation in which the evaluation is being carried out (Stockdale & Standing, 2006). The internal and external environments will both significantly influence the understanding of the many factors affecting the realisation of the IS evaluation process. There are social, political, cultural and economic factors inherent in these environments which form the background to rational decision making because of their intrinsic importance to the evaluation process. What is to be evaluated, how and why, is more complicated than might appear and is notably influenced by the stakeholders and by the context of the organisation. This is contradictory to the view expressed by Latour (2005) that the external context of actor networks is unlikely to be important and more likely to be irrelevant to their functioning, since their actions and interactions and the factors mediating these are usually locally self-explanatory. Indeed, this study found that the external and internal contexts of the bank in which the IS evaluation was performed were useful in explaining what was being evaluated, how it was being done and why a number of IS investment evaluations were carried out while others were not.

4-2-1 External context

The factors belonging to the bank’s external environment had to be understood by its stakeholders and were mediated through the IS evaluation process. Actors produced a shared understanding of the IS idea through communication facilitated by the IS proposal. Understanding the pressure of competition on IS investment is significant in the process of IS evaluation. The reason for considering the actors’ interests in competition when framing IS investment evaluation is very important; thus the potentiality of having IS investment decisions affected by competition through the process of IS evaluation is evident. Competition affected not only the organisational role of IS, but also the IS strategy within which evaluations were implemented. Although they operate within the same industry, all banks will not be faced with the same level of competition, because their characteristics will differ; this will ultimately shape the style of IS evaluation practice. As a result, the actors’ perceptions of the degree of competition and their opinions as to what action should be taken will vary and this will shape IS evaluation accordingly.

CRBA is a leading user of innovative banking technology in Jordan, according to its CIO. Interviewees recognised competition as an important factor influencing IS investment decisions and therefore playing an essential role in the style of IS evaluation adopted by the bank. CRBA executives stated in interview that the nature of the banking industry had placed the bank in a very competitive market. They therefore acknowledged competition as an important external environmental factor with a strong influence on decision making, as the literature suggests (Krishnan, Ramaswamy et al. 1999; Serafeimidis and Smithson 2000; Light and Howcroft 2006). In past years, the bank had enjoyed sustained success, but despite a growth in sales, it had recently reported a reduction in its net profit before tax, which declined in 2009 to 97 million Jordanian dinar from 142 million in 2008. The bank had identified two major external factors—which will be discussed later in this chapter—as leading to this reduction: unprecedented import competition and economic downturn. Major decisions had to be made as a result of this external pressure. Significantly, the interview data identifies competition as the cause of great turmoil in the banking sector. In response, IS investment evaluation could provide decision makers with the means to predict the success or failure of any potential IS project; therefore the bank was under continuous pressure to react to these competitive forces.

According to participants, the rigorously analytical nature of the IS evaluation process and the related safeguards were designed to reduce the uncertainty and risk associated with IS investments. In the end, executives based their decisions on what could be explained rather than what could not be explained. When they tried to reduce the risks surrounding IS investment, which they did whenever possible, they discovered that risk was always highly correlated with
uncertainty. Thus, the outcome of any IS investment project was unpredictable within a given time interval. Risk would increase with the ambiguity surrounding the expected outcome of the IS investment, especially if there was a lack of clarity concerning its scope and objectives. This was made evident by an interviewee who remarked that under the current IS strategy, the existing risk management mechanisms were inadequate. Hence, understanding the context of change would be crucial in showing how diverse interests were aligned in facing these risks. This demonstrates that the prevailing influences over IS decisions are exercised not only by the IS or specific organisational features, but also by an understanding of the general economic conditions (Al-Yaseen, Eldabi et al. 2004; Chapman 2006).

Environmental uncertainty can be seen in the economic downturn and changes taking place which will have introduced many risks that IS evaluation might not be able to quantify. This presented the bank’s management with important challenges where serious IS decision had to be taken before there was time for a full evaluation to be carried out; risk acknowledgment plays a key role in effective IS evaluation, confirming a view widely expressed in the literature (Clemons and Weber 1990; Farbey, Land et al. 1992; Applegate, McFarlan et al. 1996; Bashier, Talal et al. 2007; Myrtidis and Weerakkody 2008). This issue was further highlighted by CRBA interviewees who identified early IS investment evaluation as a particularly complex issue.

Although the Jordanian economy can be described as one of the fastest growing in the region, this growth faces many obstacles, not least the economic instability that now characterises the country and the Middle East region as a whole. In this regard, IS investment policies may be characterised as conservative, as firms put IS investment on hold for fear of making errors in IS evaluation. The downturn has exerted a heavy effect on banks, as economic uncertainty has encouraged cuts in IS investment budgets, which were notably high, as reported by a number of authors (Hoskisson, Eden et al. 2000; Lalvani 2003; Bashier, Talal et al. 2007; Ershied and Jabarin 2007). During the current economic downturn, many banks have adopted a cautious approach to investment in general and to IS investment in particular. Under such circumstances, businesses are careful about investing in new and innovative IS. As result, IS evaluation has moved from asking whether the proposed project is innovative to questioning its necessity. What characterises this situation is that evaluation is rarely carried out, due to the strictness of the strategies governing investment in general and IS investment in particular which have been adopted by the banks in response to the situation. The Jordanian banking market is still developing. While it has passed the point of emergence, it is still not fully mature. The case study bank appeared well aware of the possibility of the positive transformation that IS might bring; however, risk control continued to exert a strong influence on IS evaluation in the unpredictable economic climate. This analysis is supported by Ballantine and Stray (1998), who state that the rate of IS investment is subject to the degree of risk associated with it. Thus, with all the expected risks associated with IS investment, major consideration should be given to possible developments in the IS evaluation process.

Another external factor which cannot be ignored is government regulation, since all banks must adhere to the rules governing the banking market and work in harmony with their partners in the industry. When, for example, the adoption of an IS is imposed by a government body, there is no point in performing a pre-evaluation, since the investment is compulsory (Myrtidis & Weerakkody, 2008; Stockdale et al. 2006; Symons, 1991).

4-2-2 Internal context
There were also structures of domination such as political power which had the potential to influence and be influenced by the evaluation process. Although all concerned actors operated within the same context, they differed in the extent of their influence. Politics in the bank was the most delicate and complex issue and had the most far-reaching effects on and interactions with other factors. Obviously, previous experience of IS evaluation in the organisation could work in many ways to stand against some of the effects of internal politics. One interviewee asserted that stakeholders’ interests and conflicts governed the current IS evaluation trends at the bank, so that IS was still growing in a more critical way, though not in an unorganised manner. Other interviewees indicated that investment in new systems had made it clear that existing approaches to risk control
in IS evaluation were insufficient; hence, careful consideration of these conflicts would be crucial in showing how the diverse interests of the stakeholders and others were aligned to define IS the evaluation process. This confirms the work of Milis & Mercken (2004) and of Weill & Olson (1989).

The effect of a politically unstable environment is to detract from a common purpose or goal as consequence of the furtherance of hidden agendas and self-interests. For example, the study found instances where some actors intentionally destabilised the IS evaluation process (as a means of resistance), while some sought justifiable alternative means ('workarounds') to attain their own targets or to shorten the prolonged process of achieving project approval, and others (usually senior executives) intentionally circumvented the IS evaluation process so that they could push through their own sponsored projects. These findings are fully consistent with the work of Serafeimidis & Smithson (2003) and of Wood et al. (2004). An interest in IS was found to be a common factor, with some units placing greater emphasis on IS for a range of reasons (political or other) and relying on their own perceived significance to the organisation, usually supported by an assumed or genuine contribution to the bank’s performance. This finding is also consistent with work reported in the literature (Irani and Love 2002; Alshawi, Irani et al. 2003; Love and Irani 2004; Maizlish and Handle 2005; Bowen, Cheung et al. 2007; Hyvönen 2007). Yet these different stakeholders were not uninformed of the political intrigues that took place and there was often a recognition of the ineffectiveness of the process and its function in the approval of projects which were already underway. There is wide support in the literature for the view that political activities play a vital role in several IS evaluation processes. Political activities in the environmental context of an organisation demonstrate that stakeholders do not all share the same vision and goals and that they will try to influence the IS decision-making process in order to achieve outcomes which suit their own interests (Markus 1983; Noble and Newman 1993; Mcloughlin 1999; Jones, Hughes et al. 2001). Furthermore, the way in which an organisation conducts IS evaluation is an internal issue capable of affecting the outcome of the evaluation, because the decision to assign resources to that evaluation is a political one.

The study also found that CRBA’s expansion strategy meant that the bank would have to undergo a restructuring of its business and IS activities, amending its organisational structure to enhance the efficiency of its IS investments. Interviewees indicated that the bank’s structure had undergone a number of changes in the past in response to environmental changes. It is clear that the establishment of a new organisational structure provided the necessary foundation for the bank to integrate the efforts of business and IS people to achieve its strategic goals. Designing an organisational structure involved the incorporation of best banking practices based on clearly defined authorities and responsibilities, effective performance and support for certain activities. This required the establishment of new specialized divisions, the merging of some duties and the division of others in order to work efficiently. The organisational structure supported the decision-making network as it emerged, aligned different actors’ interests so that they would become aware of each other’s goals, and set up the decision-making tasks required to attain the bank’s strategic goals (Ellinger 2005). On the other hand, Poltrock & Grudin (1994) warn that organisational structures and processes can hinder the successful application of good and acceptable design principles, resulting in poor design features, while Lynex and Layzell (1998) found that in some organisations the structure encouraged people not to cooperate or share strategic information but instead promoted competition amongst the business units, which inhibited software reuse.

Evidence of previous IS investment activities in the bank suggests that the overall contribution of the old structure to IS investment decisions may have been understated (Miller 1993; Eason, Harker et al. 1996). Undoubtedly, in order to deliver the ideal IS investment evaluation process, serious attempts had been made to improve the organisational structure so that the IS department and other strategic business units became equal partners in the process. However, to ensure that the organisational structure reflected this acknowledgment of the significant role and importance of IS evaluation, thus assisting decision making, much more needed to be done (Decanio, Dibble et al. 2000).

These organisational characteristics will influence the actors who carry out the evaluation, making them aware of potential cultural concerns that should be taken account of in the evaluation
process. The role of organisational culture and its effects on IS evaluation were therefore investigated. In the banking culture, IS should not be implemented simply because the technology is state-of-the-art. Instead, each IS investment must develop the banking business in some way. IS is a tool that helps a bank to achieve its business goals, so it should be evaluated rigorously; otherwise, the rationality of the investment decision will be questioned. However, there is evidence that a lack of willingness to be rigorous and analytical in the evaluation process is more common in IS projects than in other capital projects (Ballantine and Stray 1999).

The organisational culture of CRBA was found to be supportive of IS thanks to the commitment of its top executives. Winning management support was clearly crucial to the success of any IS investment proposal. Senior managers had always expressed their belief in the need to change. This was true of the COO and of managers in the IT department, which had a strong track record under the leadership of its present CIO. Based on the results of the empirical study of CRBA, once the bank’s top managers had formed a view of IS as having the power to develop the bank’s operations, it was their commitment, understanding and support which made IS investment possible. However, such management support was not built overnight. All senior managers were enrolled in the network of IS investment decision making and this was underpinned by all the managers attending committee meetings. The participation of managers in the making of IS investment decisions was supported by current managerial practices, from planning all the way through to implementation (Seddon, Graeser et al. 2002). Thus, the CIO believed that in a more supportive environment, IS projects would have a higher likelihood of success. He and his peers believed that a more supportive environment would allow the bank to realise greater benefits, so when they were asked about the degree of the commitment and support of senior management for the bank’s IS strategy, all participants indicated that this was perceived to be high.

It was also found that cultural improvements would assist executives in recognizing the value of IS, so that they would begin to factor important IS issues into their decision making and invite IS and business staff to key strategy meetings, thereby involving them at an early stage in the process. It was very important to have the steering committee regularly involved in handling IS investment issues. The fact that this has become accepted practice in many large organisations further emphasises its importance (Pearlson and Saunders 2006). Regardless of the constraints on spending and the time consumed by all the many stages of evaluation before a project could be approved by senior management, each new IS project had to go through the process of appraisal by many committees so that the bank would be well positioned in a very competitive market, since its potential future benefits could never be taken for granted. The different internal environmental factors would therefore all affect the IS evaluation network, where it was not only humans who made a difference to outcomes, but also the organisation’s culture, its structure and so on. It is important to stress that an actor is not just a human inspired with intentionality but also one who is influenced by the organisational context.

One interviewee assured the researcher that IS investment could empower the bank to enter new markets, improve its activities and strengthen its position against competitors. This can be clearly seen in the fact that CRBA prioritised IS investment, but the need for more investment in the IS infrastructure was partially seen as an indication of under-investment. This meant that no kind of IS evaluation needed to be performed when decisions had to be made in that regard, which made it easier for senior managers to make IS decisions. An interviewee asserted that the bank had demonstrated high sensitivity in producing new products and services for its retail customers, although it still paid more attention to its corporate customers in particular. Improving the brand image of CRBA as offering a comprehensive banking package to satisfy the needs of its different customers, with a particular focus on the retail market, would require the bank to make more IS investments without formal IS evaluation, as this was believed to consume too much time, resulting in delays in reaching out to customers. However, despite the availability of these tools, many believe that approaches to technology investment remain largely reactive, in that systems are implemented to solve existing business problems (Khalifa, Irani et al. 2005). This lack of perspective and vision tends to restrict organisations to making investments that are likely to reduce costs in the short term (Irani and Ghoneim 2002). Consequently, the potential innovative and strategic value of IT is often lost in reactive investment practice (Maritan 2001).
In the meantime, the bank had to keep to an acceptable level of risk when extending its services, whether to large corporate customers or smaller firms. CRBA showed a certain degree of understanding of the probability of IS rewards if it has a strategic vision that would instruct this change. Thus, spending on IS to create new products in order to satisfy the bank’s needs should be considered the acquisition of capital assets that would deliver substantial value in the long run, not as interim costs (Applegate, McFarlan et al. 1996; Weill and Broadbent 1998). The new banking technologies have given the banks great opportunities to reach their targeted customers in different market segments through the establishment of innovative technological channels at relatively low cost. Customers are becoming ever more complicated and as a result are demanding more and faster access to banking products (Earl and Khan 2001).

5-1 CONCLUSION

The study offers a number of implications for research, of which the following have been found interesting and worthy of presentation. Among the primary findings of the study is a solid body of evidence that pre-evaluation is not a merely a technical process. Examination of the creation, development and evaluation of IS proposals shows that pre-evaluation is contextual and subject to both human and organisational influences. Thus, pre-evaluation practices are not purely mechanistic. In order to have a valid outcome, the evaluation process must strike a socio-technical balance among contextual, organisational and technical factors. It will be inevitably weakened if no such balance and coherence prevails among these elements.

The outcome of an IS evaluation is usually considered to be subject to the influence of many factors that continue to be perceived and empirically proven as important influences on pre-evaluation. The IS literature makes frequent reference to the existence of these factors and this suggests that they comprise a set of fundamental concerns that need to be addressed in most IS project evaluation. At best, these factors are necessary but not sufficient conditions for a satisfactory outcome for an IS evaluation, which the persistently problematic character of many IS projects evaluations has implied. Indeed, the inadequately clear character of many of these factors, the complexity in practising them within specific organisational or environmental settings, their variable influence over the timeframe of IS evaluation formation and the possibility of complex interrelationships and interactions between actors—potentially leading to unintended consequences—suggest that the mere prescription of such factors is inadequate for theorising about or improving the outcome of IS evaluation. The implication of this finding is that any assessment of the IS pre-evaluation process must also encompass an organisational perspective. Authors such as Myers (1994b) have examined failed IS implementations in an organisational context, whereas the research reported in this paper has moved the focus to the pre-evaluation of IS. It challenges organisations considering investment in technology to examine both the organisational and the technical rationale. This paper has established that IS evaluation practices and the personnel who make IS proposals are at least as important as technical assessment criteria.

REFERENCE


