Chapter 6

Evaluation of the Research

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1.   Background

The previous chapters described the development of a theory, represented through a framework, a set of hypotheses describing relationships within the framework as well as a pattern of conditions under which managers are likely to be dissatisfied with explanations of IT value. The study started with the definition of the research problem, a literature overview and the design of the research.

The theory was developed through the Grounded Theory Method. The development of the theory took place in two stages. The first stage developed a preliminary theory based on a Literature Case. The second stage, covered in Chapter 5, expanded and refined the preliminary framework into a concluding theory through two Empirical Cases.

Chapter 6 contains an assessment of the research and its findings. The chapter starts with the merit of the research problem, and then proceeds to assess the achievement of the research objective. The appropriateness of the research method and the application thereof is dealt with next. This is followed by a discussion of the research results and the degree to which the research questions have been answered. The implications and contribution of the research results are considered and specifically its application potential. The chapter concludes with some suggestions on the way forward with this particular research problem.

2.   The research has addressed the broad issue of IT value

IT has become a critical business resource for most companies today. As more and more funds are being invested in IT, the challenge of extracting and demonstrating value from this important business resource increases. IT value was shown to be part of a highly complex set of problems in Chapter 2. This complex network of problems is shown in Figure 6.1.

Figure 6.1 (from Chapter 2) IT value is part of a complex set of problems
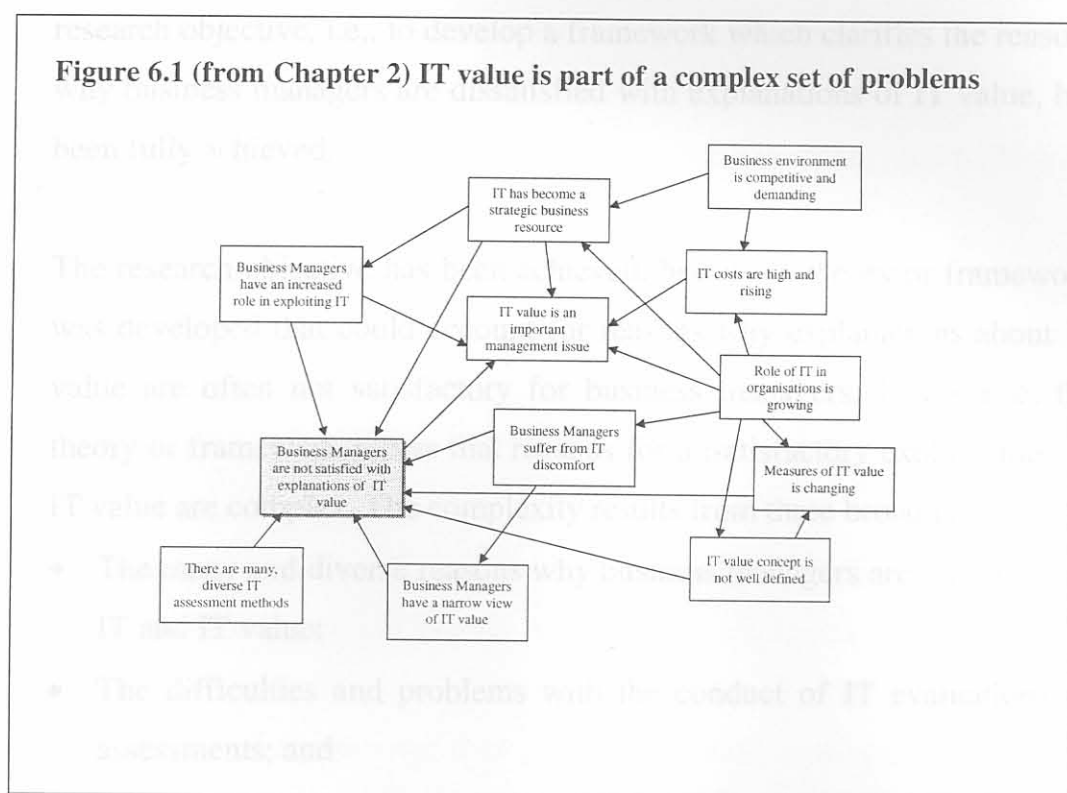
Getting satisfactory answers to questions about IT value remains a problem for business managers. "*... the question of IT value is far from settled.*" (Hitt and Brynjolffson, 1996). Despite extensive research, this problem is not yet resolved. "*Misunderstandings about value underlie all important issues faced by IS*" (CSC, 1999: 1).

As a consequence, the research addressed the following problem: "*Why are business managers often dissatisfied with explanations of IT value?*"

3.   The research focused on the development of a framework about explanations of IT value

The research objective was pursued through the application of the Grounded Theory Method. The research focus was on IT at business unit or company level and the research perspective is that of senior business executives or business managers (typically in charge of the business unit or company). The first question in assessing the research is whether the research objective, i.e., to develop a framework which clarifies the reasons why business managers are dissatisfied with explanations of IT value, has been fully achieved.

The research objective has been achieved, because a theory or framework was developed that could account for reasons why explanations about IT value are often not satisfactory for business managers. In essence, the theory or framework shows that reasons for unsatisfactory explanations of IT value are complex. The complexity results from three broad areas:

- The many and diverse reasons why business managers are interested in IT and IT value;
- The difficulties and problems with the conduct of IT evaluations or assessments; and
- A variety factors that must be addressed by the steps to improve the process of IT evaluations.

All these problem areas are inter-related, thereby adding to the complexity of the IT value problem. It is further appropriate to note that there is often a lack of agreement among the IT evaluation stakeholders, as to what constitute an acceptable definition of IT value. This is one of the fundamental factors that could be influencing enhancements to the IT evaluation process.

A further point for assessing the research is to establish whether the research questions have been answered. This aspect will be discussed in the next section.

4.   The research enabled some answers to the basic research questions

The research problem was supported through a set of four questions which have been formulated to guide the research. The questions are (from Chapter 3) the following:

1. What are the concerns that prompt business managers to inquire about the value of IT?
2. How do organisations generally approach the issue of IT value?
3. Why is the concept of IT's value so problematic for business managers?
4. How should the issue of IT's value be approached?

The answers to each of the research questions, based on the theory or framework developed in Chapters 4 and 5, will now be discussed.

1. What are the concerns that prompt business managers to inquire about the value of IT? Three major concerns, that could cause managers to be uneasy about IT value, have been established. The first concern is the high and rising organisational spending on IT. As a result, IT is consuming more and more of the organisational budget. The second concern is IT's track record in the delivery of IT projects and services. The third concern stems from management's expectations to exploit IT as an important or even critical business resource. These concerns are discussed in more detail in Chapters 3 to 5.

2. How do organisations generally approach the issue of IT value?
Organisations typically employ a variety of methods to assess IT value. The methods to evaluate IT value can be grouped according to Renkema (2000: 102 – 104) into four major types. The types of evaluation methods are:

- The Financial approach;
- The Multi-criteria approach;
- The Ratio approach; and
- The Portfolio approach.

Chapter 3 elaborates more on each of these types of evaluation. Most organisations tend furthermore to focus almost exclusively on the *ex ante* evaluation of IT.

The effectiveness of these evaluation methods are inhibited or influenced by a number of factors. There is the lack of agreement among stakeholders on how to define the value of IT as well as conceptual flaws in almost all of the IT evaluation methods. The complexity of IT benefits and IT costs further complicate IT evaluation. An additional factor is the mindset about IT evaluation; for instance, management may not devote enough time and effort to IT evaluation. The evaluation methods and factors influencing them are dealt with in more detail in Chapters 3 to 5.

3. Why is the concept of IT's value so problematic for business managers? The answer to the question why IT value is so problematic for business managers can be divided into two parts. The first part concentrates on concerns about IT value. The research has established, in the first place, that IT value is difficult to explain satisfactorily. The study has highlighted that managers' concerns about IT value are mediated or conditioned by the following aspects:

1.   Business managers often have a low level of comfort with IT and related matters, thereby limiting their appreciation of what IT can do;

2.   In many companies the relationship between IT and the business is not very good; and

3.   Many business managers have a limiting view of IT, where it is regarded as a commodity product or service instead of a potentially critical business resource. In such a case, views on IT value will be limited to cost benefits and savings. Chapter 3 elaborates more on this particular point.

The second part of the answer to the question why the concept of IT value is problematic for business managers, considers the factors that must be addressed by the steps to enhance IT evaluation process. Two of these factors deserve special mention:

1.   The difficulty in defining IT value and especially the possibility that various stakeholders could have multiple definitions of IT value; and

2.   The complexity and difficulties in identifying and measuring all of the IT benefits and costs.

4. How should the issue of IT's value be approached? This question was dealt with fully in Chapter 5. In brief, organisations must recognise that establishing IT value is difficult and complex. A comprehensive approach is required for a sustainable solution where organisations must, in the first instance, understand why IT is on the management agenda and what could be influencing management's concerns about IT value. Without this understanding, an IT evaluation could easily provide answers to the wrong question. Secondly, managers must appreciate that IT evaluations are difficult and costly. A number of factors must be addressed by the steps to

enhance the IT evaluation process. For instance, the real problem with an IT evaluation may not necessarily be with the evaluation method being used, but could more fundamentally be due to the lack of an agreed definition of IT value. Organisations must further realise that dissatisfaction with explanations of IT value is cyclical in nature. On the one hand, it could be a cause for IT being on the management agenda. On the other hand, it could be the result of an ineffective IT evaluation process.

The research has thus provided answers to all the research questions. The assessment of the research also needs to consider the suitability of the research method employed. The assessment of the research method will be discussed in the next section.

5.   The Grounded Theory Method has proven to be a suitable research method

A qualitative research approach was adopted, since the issue of IT value is not so much a technical issue, but more a managerial and organisational issue (refer to Chapter 3 for more detail).

It was further shown in Chapter 3, that an interpretive approach to qualitative research is appropriate. It was explained that this approach provides a way of increasing our understanding of critical IT issues. As a result the Grounded Theory Method was selected as the specific methodology to conduct the research.

Strauss and Corbin (1990: 251 – 254) provide some evaluative criteria for judging grounded theory research. They say, in judging a research publication, that 1] judgments are made about the validity, reliability and

credibility of data; 2] the adequacy of the research process through which the theory has been generated; and 3] judgments are made about the empirical grounding of the research findings.

The criteria suggested by Strauss and Corbin (1990: 253) will now be used to assess the research process. The assessment is done in the following sections.

- *How was the original sample selected? (On what grounds?)* Figure 6.2 (imported from Chapter 4) shows an overview of the research approach.

Figure 6.2 The overall research approach
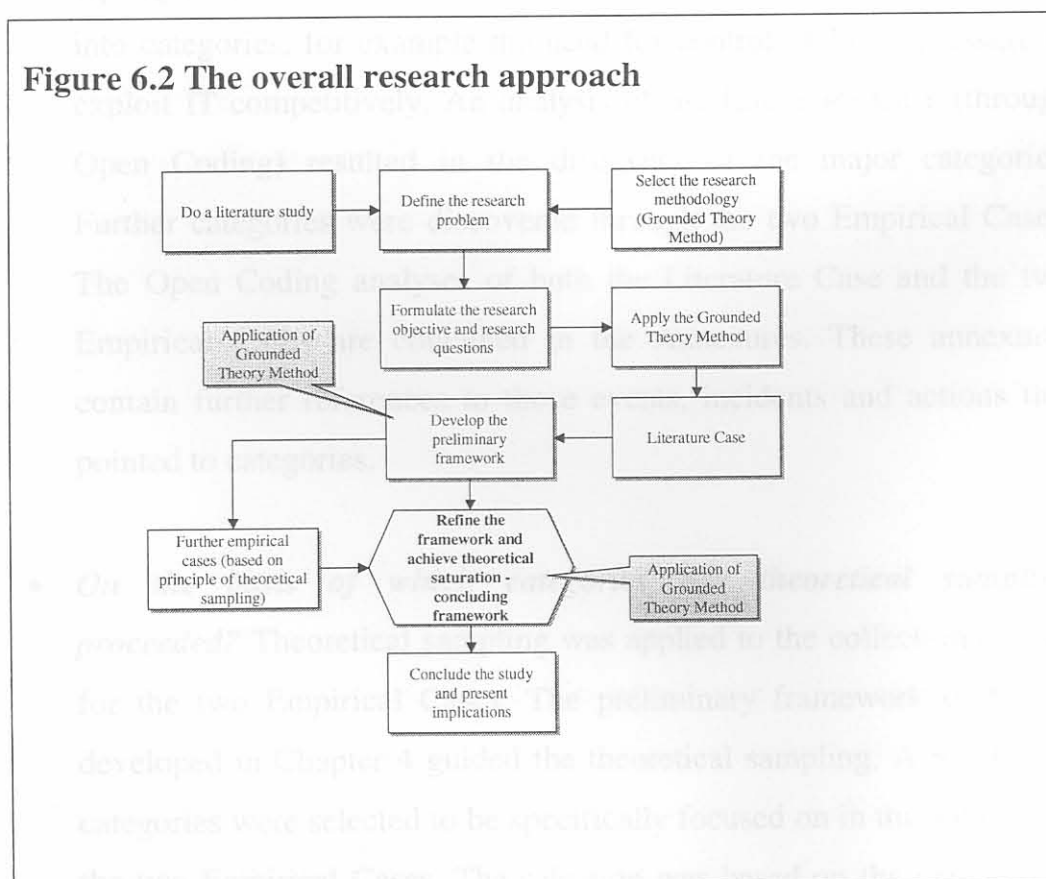
The development of the framework started with a Literature Case where books, documents and papers were selected for the Literature Case. These

were selected based on their relevance to the phenomenon being studied as well as ensuring a broad coverage of the data. The Literature Case was used to develop a preliminary framework or theory.

- *What major categories emerged?* A total of 19 categories were selected to form the concluding framework shown in Chapter 5, Figure 5.7. Six sub-categories were also identified.

- *What were some of the events, incidents, actions that pointed to these categories?* The various aspects of the research problem emerged in Chapter 2. The overview of the literature in Chapters 2 and 3 highlighted various incidents and actions that were eventually grouped into categories, for example the need for control of IT or pressure to exploit IT competitively. An analysis of the Literature Case (through Open Coding) resulted in the discovery of the major categories. Further categories were discovered through the two Empirical Cases. The Open Coding analyses of both the Literature Case and the two Empirical Cases are contained in the Annexures. These annexures contain further references to those events, incidents and actions that pointed to categories.

- *On the basis of which categories has theoretical sampling proceeded?* Theoretical sampling was applied to the collection of data for the two Empirical Cases. The preliminary framework or theory developed in Chapter 4 guided the theoretical sampling. A number of categories were selected to be specifically focused on in the analysis of the two Empirical Cases. The selection was based on the explanatory ability of the categories (in other words the categories' ability to describe the research problem), as well as the degree of saturation for each category evident from the Literature Case. Application of the

Grounded Theory Method resulted in some changes to the major categories. These changes are described in more detail in Chapter 5.

- *What were some of the hypotheses pertaining to the conceptual relations and on what grounds were they formulated and tested?* A complete list of hypotheses, describing all the relationships between the elements of the concluding framework, is shown in Chapter 5. The process of Axial Coding and specifically the Paradigm Model was used to identify and develop these relationships. Each hypothesis was validated against the Literature Case and/or the two Empirical Cases. Axial coding and hypothesis testing activities are covered in more detail in Chapters 4 and 5.

- *Were there instances when hypotheses did not hold up against what was actually observed?* New categories emerged through the Open Coding of the Empirical Cases. As a result, some of the hypotheses developed in the Literature Case had to be amended or dropped. New hypotheses had to be formulated and tested. The new hypotheses, as well as the amended hypotheses were validated against the Empirical Cases (see Chapter 5 for more detail).

- *How and why was the core category selected?* The broad issue of IT value surfaced as a major challenge in the researcher's work situation. This proved to be a general issue for business and IT managers across organisations. The need to develop a deeper understanding emerged from the literature study where the complexity of resolving the IT value issue was comprehensively illustrated (see also Figure 6.1).

The research process has been assessed in the preceding sections. The empirical grounding of the study must further be considered. Strauss and

Corbin (1990: 254 – 256) provide the criteria for assessing the empirical grounding of the study. Each of these will now be assessed in more detail.

- *Are concepts generated?* Yes, the Open Coding process was used to generate concepts. Concepts were derived from both the Literature Case and the two Empirical Cases. The Open Coding analysis to identify concepts is shown in the Annexures.

- *Are the concepts systematically related?* The techniques of questioning and the making of comparisons in the Grounded Theory Method were used to relate concepts and to group the concepts into categories. The basic and supporting research questions that guided the formation of categories were formulated in Chapters 3 and 5. See also the Annexures for the grouping of concepts into categories.

- *Are there many conceptual linkages and are categories well developed? Do they have conceptual density?* The categories established through the Open Coding process were conceptually related through the Paradigm Model (see also Figure 4.4 and Table 4.1 for a description of the Paradigm Model). Each category has furthermore been developed in terms of its attributes and the dimensions each of these attributes can assume. Hypotheses have been developed to specify or describe the conceptual links between categories. The attributes of the categories were used to specify under which circumstances (context) the central phenomenon is likely to occur. The pattern of conditions for the concluding framework is shown in Table 5.6.

- *Is much variation build into the theory?* This study has focused specifically on the central phenomenon, namely where explanations of

IT value (i.e., the results of IT value assessments) are not satisfactory for business managers. A pattern of conditions, under which this phenomenon can occur, has also been specified (Table 5.6). Some ideas for extending the theory or framework are suggested later in this chapter.

- *Are the broader conditions that affect the phenomenon built into its explanation?* The application of the paradigm model (refer also to Figure 4.4 and Table 4.1) ensured that the broader conditions affecting the research problem have been considered. For instance, (referring to Figure 5.7) it is clear that expectations to exploit IT competitively and increasing IT expenditures are some of the broader conditions influencing the research problem.

- *Has process been taken into account?* Process has been accounted for in the development of the framework. This is most evident from the concluding framework or theory where the category labeled **'Dissatisfaction with explanations of IT value'** is a <u>causal condition</u> for management's questions about IT value. This category is also a <u>consequence</u> of 'unsuccessful' IT evaluations. Thus in a scenario (refer to Figure 5.7) where IT evaluation is improved to produce more satisfactory explanations of IT value, business managers will be less inclined to be concerned about IT value.

- *Do the theoretical findings seem significant and to what extent?* The study has highlighted the complex interplay of issues surrounding the IT value phenomenon. The concluding theory or framework with its holistic approach, relates these issues to each other and to the IT value problem. The framework facilitates an improved understanding of the problem, which allows for more effective approaches to be developed.

The manner in which the problem was approached is quite comprehensive. The approach not only considered problems around IT evaluation, but also the variety of reasons why IT value is questioned in the first place. The approach further considered reasons why improvements to IT evaluation are difficult and often not very successful. The framework could stimulate new research or studies relating to the problem of IT value. Chapter 5 also contains a section on the significance of the findings for managers.

Apart from the empirical grounding of the study, the significance of the research findings is an important factor in the evaluation of the research. The significance of the research findings will be dealt with in the following section.

6.   The findings of the research resulted in an improved appreciation of the research problem

The objective of the research was **"To develop a framework which clarifies the reasons why business managers are dissatisfied with explanations of IT value."** A theory or framework was therefore developed which could assist organisations to improve their understanding of the IT value problem. This represents an important step in the process of finding an effective and sustainable solution to situations where managers are dissatisfied with explanations of IT value.

The concluding framework, as depicted in Figure 5.7, has significant explanatory potential. This potential is illustrated through the application of the framework to a case study where IT value is a pertinent issue. The explanatory power of the framework will be confirmed by relating and applying the theory or framework (with its supporting hypotheses and the

pattern of conditions under which there is dissatisfaction with explanations of IT value) to the problems and issues contained in this case study. The case study is entitled: "The IT System That Couldn't Deliver" (Reimus, B. 1997. *The IT System That Couldn't Deliver.* Harvard Business Review, May-June 1997: pp. 22-35. The article is included as an Addendum). The case study can be summarised as follows:

> *In essence the case study concerns Lenox, an insurance company. Lenox has invested in Lifexpress, a sophisticated computer system. Lifexpress allows Lenox's agents nation-wide to conduct business with their customers and prospects in ways that had seemed next to impossible a few years earlier. Lifexpress allows an agent, using a laptop computer, to develop a thorough financial profile of a customer, then to identify and explore Lenox's most appropriate policies, to conduct an initial actuarial analysis, as well as doing a comparison with competitors and then to generate the required paperwork.*

> *For various reasons, Lifexpress was not having the market impact that the Lenox executives had hoped for. The Chief Executive of Lenox has called a management committee meeting to assess the situation. The key players in the case study are: 1] James Bennet, CEO and President of Lenox; 2] Diana Sullivan, Chief Information Officer; and 3] Clay Fontana, Lenox's Chief Financial Officer. [Sullivan furthermore reports to Fontana.]*

The complete case study is in the Annexures. The concluding theory, developed in Chapter 5, will now be used to provide structured comment on the case study. The framework, as a key element of the theory, is shown, for quick reference purposes, in Figure 6.3 below.

Figure 6.3: The concluding framework[1)]
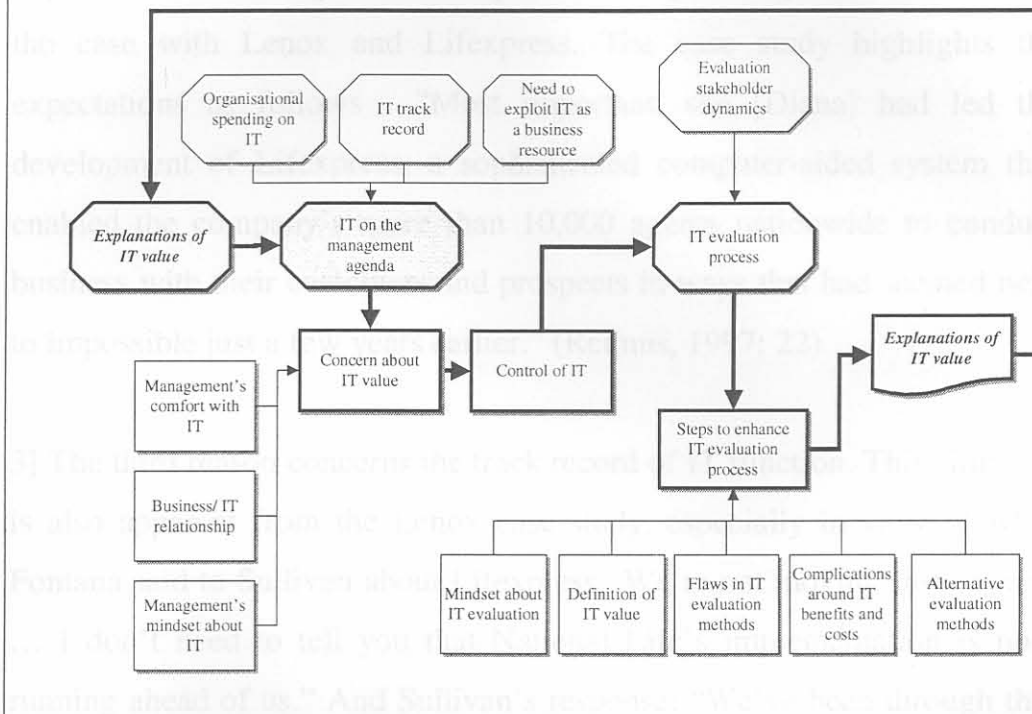
[1)] The framework must be viewed in combination with the hypotheses describing the relationships between the framework elements (Table 5.7) and the pattern of conditions under which there is dissatisfaction with explanations of IT value (Table 5.6)

From the case study, it is clear that IT is quite prominent on the management agenda of Lenox. In terms of the framework (Figure 6.3) there could be specific reasons for IT to be on the management agenda:

1] One reason is organisational spending on IT since Lenox has incurred significant spending on Lifexpress. For instance, in the case study it is stated that "… Lenox's executives were growing concerned that the multi-million dollar project would not have the impact that they have hoped for." (Reimus, 1997: 22) and a further comment from Bennet: "… Diana should do an update of where things stand. Suffice it to say that I don't believe we are where we need to or expected to be with the kind of investment we have made." (Reimus, 1997:23).

2] Another reason for IT to be on the management agenda, is the expectations of management to exploit IT competitively. This seems to be the case with Lenox and Lifexpress. The case study highlights the expectations as follows - "Most important, she [Diana] had led the development of Lifexpress, a sophisticated computer-aided system that enabled the company's more than 10,000 agents nationwide to conduct business with their customers and prospects in ways that had seemed next to impossible just a few years earlier." (Reimus, 1997: 22).

3] The third reason concerns the track record of IT function. This situation is also apparent from the Lenox case study, especially in view of what Fontana said to Sullivan about Lifexpress "We're not moving fast enough ... I don't need to tell you that National Life's implementation is now running ahead of us." And Sullivan's response: "We've been through this before, ...A large percentage of National Life's [a competitor] agents are younger and more technology savvy. Even though we're behind schedule, I am confident that we will get on track before the year is out." (Reimus, 1997:23).

The hypotheses supporting the framework (Table 5.7) indicates that if IT spending is high; if there is a need to exploit IT; and if there are perceptions of a poor IT track record then IT will be a high priority on the management agenda. If IT is high on the management agenda, then concerns about the value of IT will also be high. This is also the case with Lenox. To illustrate the point, Bennet told Sullivan: "I spoke to one of National Life's general agents the other day ... and he told me they were closing deals on most policies in less than half the time it's apparently taking us. They began their rollout more than six months after we launched Lifexpress, and look at how much of National's field force is on

their system … Can someone explain to me why that's not happening here?" (Reimus, 1997: 23).

The research has shown that if IT is high on the management agenda, then management's concern about IT value will be high. Figure 6.4 points out that management's concern about IT value is conditioned by various factors.

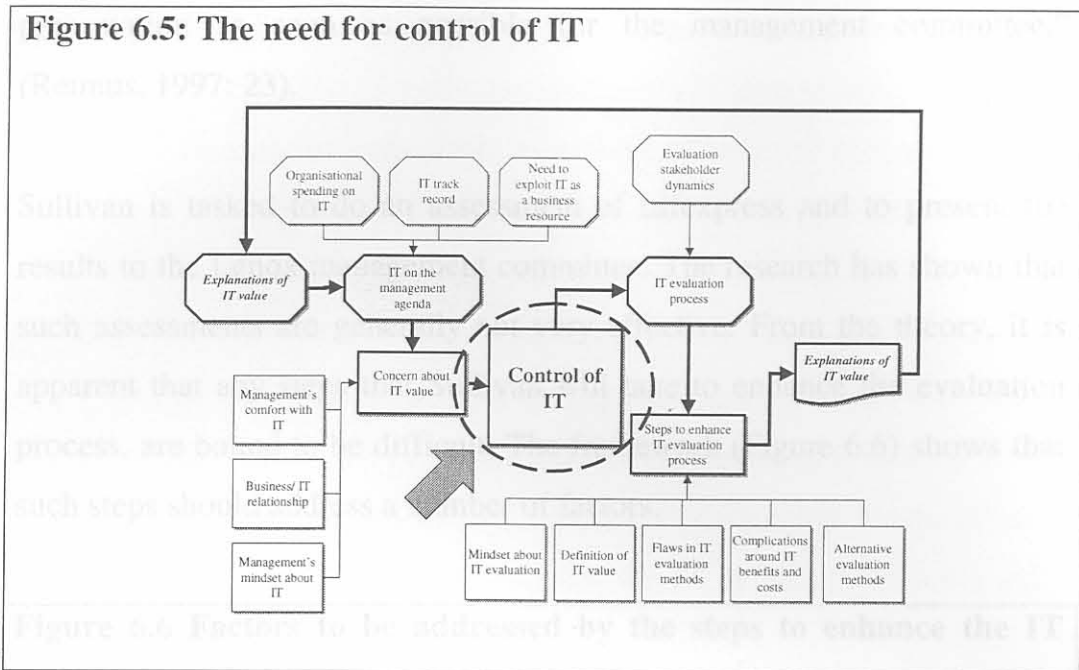**Figure 6.4: Management's concern about IT value is conditioned by various factors**
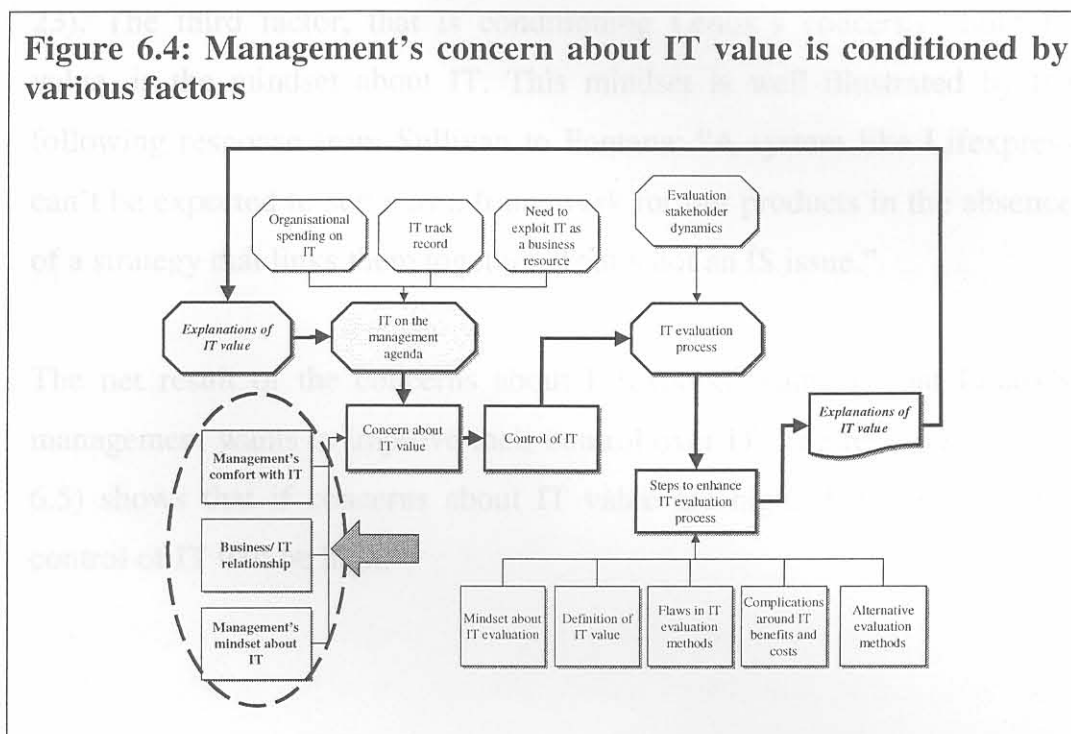
The Lenox case study highlights all three the factors, namely management's comfort with IT, the business/IT relationship and management's mindset about IT. Each of these factors will now be briefly discussed.

Lenox's management is not entirely comfortable with IT matters. A statement from Bennet is typical of this: "Computers have never been one of our strengths. We know we have some catching up to do." (Reimus, 97: 22). The relationship between the key business and IT managers of Lenox

is also not good. For example, Fontana said to Sullivan: "It's your system, Diana, … you know what the bottomline is. We made this tremendous investment based on your recommendation." Sullivan reacted to Fontana's statement as follows: "Lifexpress has met its implementation schedule and come in on budget. We have met all the system requirements that were identified early on … but we need more leadership to carry our original vision to fruition." A remark from Bennet to Sullivan reinforces the point: "I don't think you have kept us sufficiently informed." (Reimus, 1997: 23). The third factor, that is conditioning Lenox's concerns about IT value, is the mindset about IT. This mindset is well illustrated by the following response from Sullivan to Fontana: "A system like Lifexpress can't be expected to serve as a framework for our products in the absence of a strategy that links them together. That's not an IS issue."

The net result of the concerns about Lifexpress' value is that Lenox's management wants to improve their control over IT. The research (Figure 6.5) shows that if concerns about IT value are high, then the need for control of IT will be high.

Figure 6.5: The need for control of IT

Bennet stated: "... Suffice it to say that I don't believe we are where we need or expected to be with the kind of investment we have made." He then told Sullivan: "Please schedule a time for us to meet, and let's put together a presentation as soon as possible for the management committee." (Reimus, 97: 23).

The theory (and specifically Table 5.7) shows that if the need for control of IT is high and/or if the dynamics among evaluation stakeholders are political, then the need for an effective IT evaluation process will be high. The high need for control of IT at Lenox has already been discussed. The dynamics between the key actors at Lenox are not healthy. This is illustrated by the following incident: "To Sullivan's distress, her boss, Clay Fontana, Lenox's chief financial officer, was clearly trying to hold her accountable for more than the creation and implementation of the system [Lifexpress] – he was putting her on the hook for the results of the system, too." (Reimus, 1997: 22). Bennet is calling for an assessment of Lifexpress: "Diana should do an update of where things stand" and "Please schedule a time for us to meet, and let's put together a

presentation as soon as possible for the management committee."
(Reimus, 1997: 23).

Sullivan is tasked to do an assessment of Lifexpress and to present the
results to the Lenox management committee. The research has shown that
such assessments are generally not very effective. From the theory, it is
apparent that any steps that Sullivan will take to enhance the evaluation
process, are bound to be difficult. The framework (Figure 6.6) shows that
such steps should address a number of factors.

Figure 6.6 Factors to be addressed by the steps to enhance the IT evaluation process
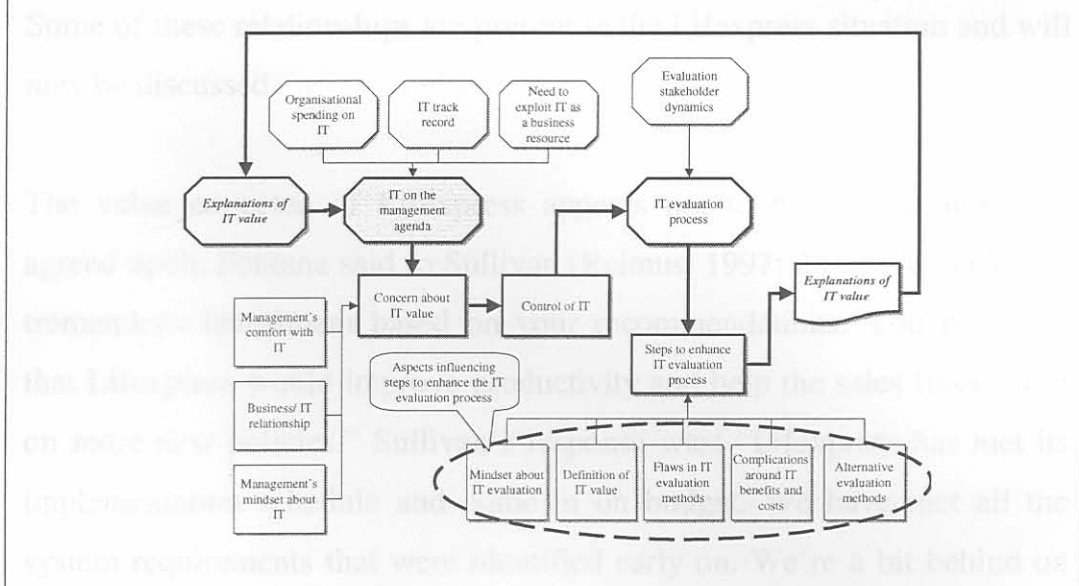
The research has established some specific relationships pertinent to the
steps to enhance the evaluation process. The relationships, extracted from
Table 5.7, are shown below:

- If the definition of IT value is problematic, then steps to enhance the IT evaluation process will have to address it
- Because of complications around IT benefits and costs, steps to enhance the IT evaluation process will have to address it
- Because of significant flaws in IT evaluation methods, steps to enhance the IT evaluation process will have to address it
- If the mindset about IT evaluation is conservative, then steps to enhance the IT evaluation process will have to address it
- If the availability of alternative evaluation methods are limited, then steps to enhance the IT evaluation process will have to address it

Some of these relationships are present in the Lifexpress situation and will now be discussed.

The value expected of Lifexpress appears not to be well defined and agreed upon. Fontana said to Sullivan (Reimus, 1997: 23): "We made this tremendous investment based on your recommendations. You predicted that Lifexpress would improve productivity and help the sales force close on more new policies." Sullivan's response was: "Lifexpress has met its implementation schedule and come in on budget. We have met all the system requirements that were identified early on. We're a bit behind on training, to be sure. But we need more leadership to carry our original vision to fruition." Furthermore, the benefits expected of Lifexpress appear to be not clear: "We're behind in part because we don't have a clear product strategy. Our tendency has been to jump on the proverbial bandwagon every time a competitor comes out with a new product ... A system like Lifexpress can't be expected to serve as a framework for our products in the absence of a strategy that links them together." (Sullivan to Fontana, in Reimus (1997: 23)). From the preceding it would seem that

steps to enhance the evaluation process would have to address these issues before the value of Lifexpress could be assessed.

The case study does not cover the actual management committee meeting. The theory indicates, though, that if steps to enhance the IT evaluation process are not effective, then explanations of IT value will not be satisfactory. This is according to the theory a recurring phenomenon, in other words, if explanations of IT value are not satisfactory, then IT will remain high on the management agenda and the whole process will start afresh.

The research and subsequent theory are not only useful to describe the potential dissatisfaction with explanation of the value of Lifexpress at Lenox. It also provides some guidelines to Lenox's management on how to effectively deal with the situation. The framework shows firstly that dissatisfaction with explanations of IT value is a complex issue. Lenox's management must realise that simplistic, "silver bullet"-type solutions to resolve the issue may not be sufficient.

A comprehensive approach is needed for sustainable solutions. The proposed approach has, in terms of the theory, two purposes. The first is to establish what the rationale for the evaluation is and the second is to ensure an effective evaluation process. The dual purpose is shown in Figure 6.7 on the following page. In terms of the rationale for the evaluation, the Lenox management should be clear on what they would be discussing at the planned management committee meeting. Are they focusing on Lifexpress and/or on Sullivan? The Lenox management should further clarify what their real concerns are: is it the high spending on Lifexpress or the urgent need to exploit it competitively or is it Sullivan's track record with Lifexpress?

Figure 6.7: The approach to enhance explanations of IT value has a dual purpose
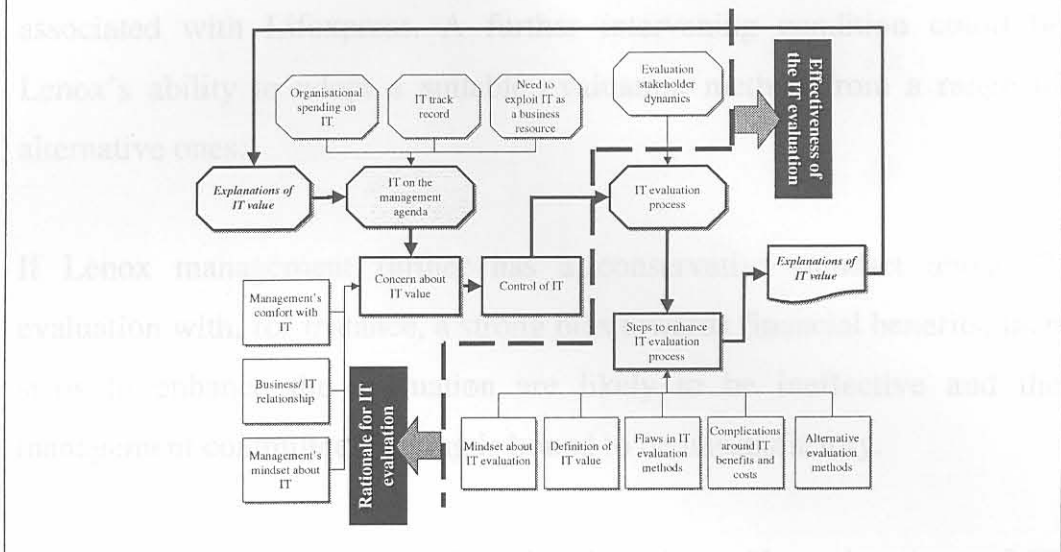
The research indicates that failure to reach clarity on this point will cause dissatisfaction with the evaluation results. The Lenox management must consider in addition, whether their concerns are not perhaps conditioned and influenced by their level of comfort with IT matters or by the seemingly poor relations between business and IT (most notably between Sullivan and Fontana).

As mentioned before, the proposed approach has two purposes or aims. The first aim is to establish the need and rationale for the evaluation of IT. This has just been discussed. The second purpose or aim is to ensure an effective evaluation process (refer also to Figure 6.7 above). According to the theory (see Table 5.5), the IT evaluation process could be ineffective, the state of evaluation could be informal or low key and the evaluation capability could be low. Lenox's management and Sullivan specifically must establish whether there is the need for steps to enhance the evaluation process.

The Lenox management must further recognise that the above steps should address factors (Figure 6.7) like the lack of an agreed definition of Lifexpress' value to Lenox or complications around the benefits and costs associated with Lifexpress. A further intervening condition could be Lenox's ability to adopt a suitable evaluation method from a range of alternative ones.

If Lenox management further has a conservative mindset about IT evaluation with, for instance, a strong bias towards financial benefits, then steps to enhance the evaluation are likely to be ineffective and the management committee meeting is bound to be unsatisfactory.

Lastly, it is essential to note that dissatisfaction with explanations of IT value, whether it is about a particular information system or about the IT function, is cyclic in nature. If Sullivan's evaluation presentation or report to the Lenox management committee is not satisfactory, then Lifexpress or the IT function (Sullivan) or even both will remain as an issue on the Lenox management agenda. Concerns about the value of Lifexpress, or about the IT function, will increase and the pressure for more effective assessments would intensify. If this cycle continues, it could result in some drastic management actions from Bennet and the Lenox management committee.

Figure 6.8: Dissatisfaction with explanations of IT value is cyclic in nature
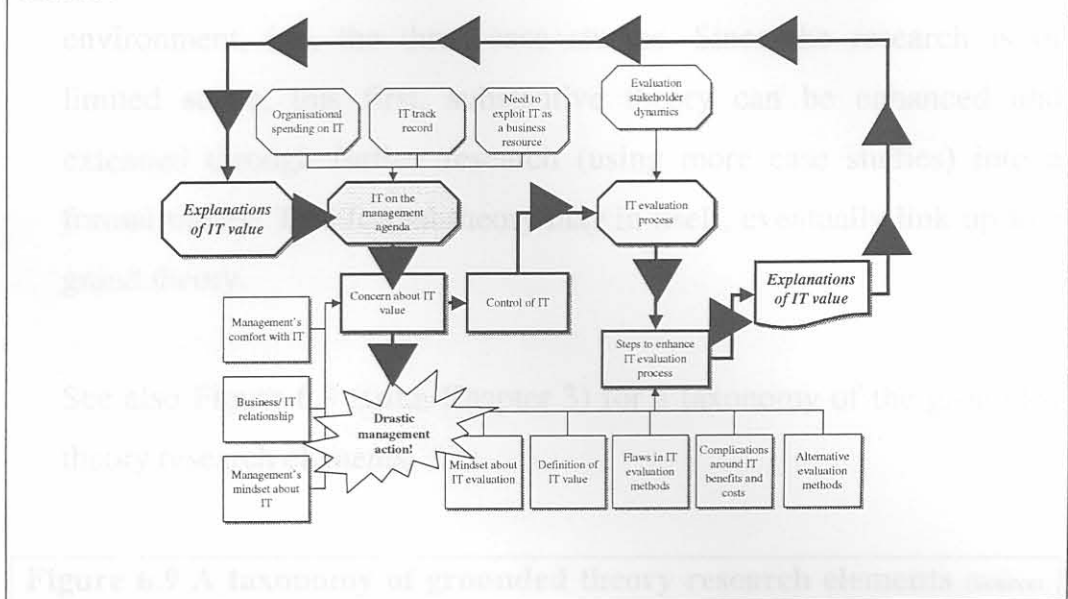
The above discussion has demonstrated the application of the theory (i.e., the framework in Figure 6.3 in combination with the hypotheses (Table 5.5) and the pattern of conditions (Table 5.4)) to a case study. The theory has, however, not only application potential, but could generate or guide further research. The next section addresses this point.

7.   The framework also points to further research and study opportunities

The framework developed in this study attempts to provide a more holistic understanding of the problems surrounding the issue of IT value. Given the importance of the phenomenon being researched, the following suggestions are made for further research:

- The framework could be used to identify and select categories with the greatest explanatory power with regard to the issue of IT value. Such categories should be considered as priorities for further research into the phenomenon where business managers are not satisfied with explanations of IT value.

- As described in Chapter 3, this research results represents a first, substantive theory linked primarily to the immediate research environment, i.e., the three case studies. Since the research is of limited scope, this first, substantive theory can be enhanced and extended through further research (using more case studies) into a formal theory. This formal theory may in itself, eventually link up to a grand theory.

See also Figure 6.9 (from Chapter 3) for a taxonomy of the grounded theory research elements.

Figure 6.9 A taxonomy of grounded theory research elements (Source: Lehman, 1999: 8)
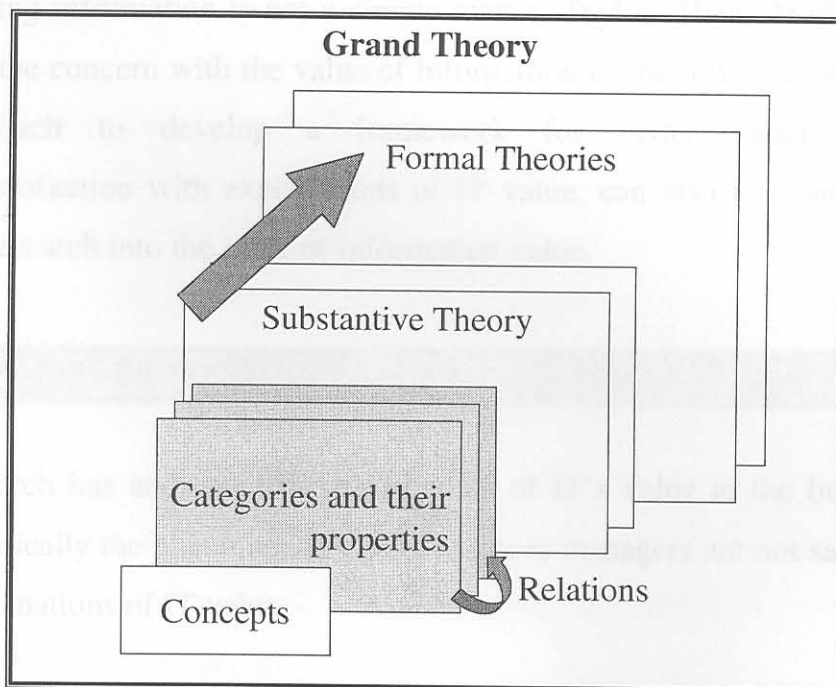
- Acceptable levels of saturation were achieved after subjecting the two Empirical Cases to the GTM. Subjecting the framework or research

problem to further cases could result in the expansion and further refinement of this substantive theory into a Formal Theory. The expansion and refinement could be in the form of new or revised categories or hypotheses, while the attributes and dimensions of the categories could also be refined.

- Each of the categories provides in own right, ample scope for more in-depth research. Such research will benefit from having the framework as a comprehensive context to work within. A deeper understanding from such in-depth research on any of the categories in relation to the central phenomenon, could add to the refinement and further development of the overall theory.

- The issue of information value is closely related to, but distinct from this research problem. According to van Loggerenberg (1995: 75) valuing information is not a simple matter. Taylor (1986: 4) observes that the concern with the value of information is not new. The research approach to develop a framework for better understanding dissatisfaction with explanations of IT value, can also be considered for research into the issue of information value.

8.   Contribution of the research

The research has addressed the broad issue of IT's value to the business and specifically the phenomenon where business managers are not satisfied with explanations of IT value.

The key contribution of the research is the establishment of a framework for a deeper understanding of why explanations of IT value are not satisfactory. The framework is, to the best of our knowledge, the only one of its kind.

The framework reflects a business management perspective and highlights: 1] the need to appreciate the reasons why business managers are concerned about IT value and 2] the difficulties around the effectiveness of the IT evaluation process. Unsatisfactory explanations of IT value reflect both as a consequence of an ineffective IT evaluation process as well as a causal condition leading to management concerns about the value of IT.

9.   Summary

Chapter 6 has concluded the research with an assessment of its findings. This assessment was largely guided by the evaluation criteria provided by Strauss and Corbin. The evaluation has confirmed that the research problem has substantial significance for business managers.

The research objective required the development of a framework as a step towards understanding dissatisfaction with explanations of IT value. The theory consisting of a framework, supported by hypotheses about relationships within the framework as well as a pattern of conditions under which the research problem occurs, was produced through the application of Grounded Theory Method. Three case studies were used that resulted in a concluding theory consisting of a framework, a set of hypotheses describing the relationships between the elements of the framework and a pattern of conditions under which there is dissatisfaction with explanations of IT value.

The research results appear to meet the criteria for research based on the Grounded Theory Method. The theory or framework proved further to be effective in providing answers to all the basic research questions. The main contribution of the research is the framework for understanding why

explanations of IT value are not satisfactory. This framework is believed to be unique. The framework demonstrated, in addition, real-life application potential since it was used in a case study to clarify issues related to IT value in real-life situations.

Lastly, the research and specifically the theory suggest some opportunities for additional research and for the further development of this initial substantive theory about dissatisfaction with explanations of IT value, into a formal theory.

10. Concluding Remarks

The research has produced a theory that describes the reasons why managers are often not satisfied with explanations of IT value. The theory represents an improved understanding of the research phenomenon, which could be of significance for managers. Organisations must firstly recognise that a comprehensive approach is required to cope with the difficulties and complexity in establishing IT value.

The theory indicates two broad strategies to overcome or avoid dissatisfaction with explanations of IT value. The first strategy is to fully understand the reasons for management's concern about IT value as well as to recognise those conditions that could influence concerns about the value of IT. The second strategy is to ensure an effective IT evaluation process by specifically addressing those conditions that could influence or mediate steps to enhance the IT evaluation process.

Organisations must further appreciate the significance of dissatisfaction with explanations of IT value. Incidents of dissatisfactions are cyclical in nature and will not go away on their own. The research and resulting

theory represents a milestone in the quest to understand dissatisfaction
with explanations of IT value. The quest is, however, not over yet …