Chapter 7
Summary, conclusions and recommendations

Undoubtedly measuring knowledge assets must be imprecise, but there is a lot of informed guesswork in ‘hard numbers’ too. If the process of measuring tangibles were foolproof, companies would never have to take write-offs for those assets or argue with tax authorities about whether their useful life (and hence the rate at which they should be depreciated) is five, ten, twenty, or more years. More to the point, enthusiastic experimentation with measures is the best way to improve them (Stewart, 1997, p. 223).

7.1 Introduction

In section 1.3 on page 1.5, the following statement was made*: The perception is that knowledge economy management philosophies are only truly applicable when managing knowledge workers. This perception is challenged because the advantages of these philosophies are such that they should also be deemed applicable within a back office environment – and more specifically within a library and information service (L&IS) back office environment.* An extensive literature survey was conducted to establish what the knowledge economy involves, which knowledge economy management philosophies are being practiced and which of the available philosophies would be most appropriate to use within a library and information support services environment. As a result of the survey, it was decided to investigate intellectual capital management in detail and Chapter 3 was utilized to establish what the principles of intellectual capital management are, what generic tools and techniques could be identified and are available to stimulate growth in the skills, competencies, capabilities and job satisfaction of the workforce, and which of those tools and techniques are appropriate within the information support services environment. An attempt was then made to establish, from the literature, appropriate mechanisms for measuring and reporting on the impact of introducing intellectual capital management and which of the measures are of use and interest within the context of L&IS. With the theoretical knowledge as background, the management philosophy was then implemented within the context of a special L&IS within a large South African research organization. The actions that represent the strategy and the realities of implementing and maintaining a knowledge era management philosophy were discussed in detail in Chapter 5. Chapter 6, and more specifically Attachment 1, presented the impact of having introduced intellectual capital management.

This final chapter will be used to provide an overview of the results achieved, conclusions reached, the impact of preparing a benchmark report, and recommendations for further research.

7.2 Overview of the results achieved

Table 6.1 on page 6.4 provides an overview of the change in the situation, as it was in 2001 and then again towards the end of the research period. The results achieved are presented briefly below:

Human capital has grown from a situation where the management structure was top-heavy, staff were in the same positions for a prolonged period and very little evidence of innovation and sharing of knowledge was evident, to a situation where:

- There is a reduced number of managers.
- Staff members have many opportunities to participate and provide input in matters that are of concern to them.
- A number of staff members have been moved to more challenging positions.
- Areas where change is critical, due to the age profile, have been identified.

- There is an increase in professional activities. For example, the group can vouch for one association chairmanship and two conference papers.
- Professional society meetings and training sessions are attended regularly by a wide spectrum of staff members.
- Although still limited, sharing of information and knowledge is taking place as staff members are, for example, beginning to informally train each other.
- The staff tearoom is utilized to a larger extent but there still are problems that have to be addressed.
- The e-mail system is being used more effectively as a communication medium. Standard templates for customer communication have been developed while jokes and fun items are rather shared via the staff newsletter.
- Necessary skills are intact and the skills level is growing. Staff members are assisting each other in acquiring new knowledge about applications.
- Innovation and creativity are visible through both marketing activities and the development of web products.

Structural capital too has shown growth. At the start of the research period the venue needed redecorating, the library system still needed to be fully implemented, the e-mail and document management systems were under-utilized and photocopying equipment needed maintenance. These issues have been addressed and most of the foundation work for effective structural capital has been completed. It will be possible to continue upon this route after the completion of this research. Some of the achievements worth mentioning are the following:

- All work areas were changed to open plan offices, re-painted and carpeted. The communal recreation areas were also upgraded.
- All but one module of the library system has been implemented. The physical library stock should be fully integrated within the current calendar year.
- The document management system has become an integral part of the modus operandi.
- Managers are all able to use the e-mail system's advanced features and do so regularly. All staff members are able to accept appointments and check the status of their own e-mails to clients.
- The Intranet interface gives access to a variety of supplier products as well as organizational memory information.
- The CSIRIS homepage has been on the list of the 10 most visited sites on the CSIR Intranet since January 2002.
- A new maintenance contract has been negotiated with the photocopy machine supplier. Alternative equipment and a changed work procedure have lessened the dependency on photocopying equipment.

Customer capital has grown from a situation where marketing was not considered seriously, branding was done haphazardly, contact was aimed at selling and customers had no insight into price structures, to a situation where:

- Contact is aimed at marketing.

- The contact address list has been transferred to a user-friendly system where it is updated and maintained regularly.
- Marketing is the responsibility of a task team. The task team is functioning very efficiently. A marketing plan has been prepared and implemented and marketing material is used effectively.
- The awareness of branding is intact. The CSIRIS brand is well established internally. It is used consistently on the Intranet, marketing e-mails and promotional material. The CSIR brand is used for external communication.
- Customers have insight into why and when handling fees are charged.

In the last instance there has also been growth in the area of financial capital. Proof of this is evident because:

- Staff members are conscious of expenditure and income and the impact of these on IMPS.
- In support of cost consciousness, the private use of telephones and stationery is monitored and controlled.
- The rationale behind pricing structures is documented and applied consistently.
- There is an established and managed relationship with all stakeholders.

In the process of implementing intellectual capital management in a back office context, a considerable number of lessons were learnt. These lessons are reflected in section 7.3 below.

7.3 Lessons learnt while introducing intellectual capital management

Numerous lessons were learnt while implementing intellectual capital management within the CSIRIS IMPS section. These lessons were discussed in sections 5.4.2 on page 5.29 and 5.4.4 on page 5.45. The following is a summary of the identified lessons:

- The adaptation from supervision and even management to leadership requires patience and much practice.
- Initial or fledgling attempts from staff to be innovative, to test their responsibilities and to build confidence are at times difficult to recognise and therefore easy to destroy.
- Without benchmarked standards, it is only possible to access skills properly once the manager or leader really knows the staff members and is able to evaluate their contribution independently.
- Building a team is, during the best of times, a difficult process and sufficient time is needed.
- Typical change management problems will occur, especially during the initial stages of implementation. It was seen as important to identify and manage these and not to pull individual incidences out of context. For example, it is important to remember that:
    - What is said is interpreted as what is meant – to the letter.

  - Absenteeism is a known symptom of change in the workplace. It is a major challenge when there are fewer as well as 'new' staff members in a team.
  - In a new situation, new staff members need considerable attention because the existing staff members are not able to provide the same amount of support they would under normal circumstances.
  - Change is more difficult for some people than for others.
  - Comfort zones are comfortable – for all.

- Staff members should be given as much assistance as is possible to adapt to new circumstances and requirements.
- Not all teams are able to manage themselves with the same amount of success within an unstructured environment.
- It is very easy to allow the results of a skills audit to overshadow development that is taking place. It is therefore recommended that the requirements for skills levels are established prior to doing an audit so that the result of the audit does not come as a surprise to those being audited.
- A knowledge era information service needs a reliable and dependable infrastructure. Building that infrastructure brings about additional responsibilities that are at times difficult to justify.
- Stakeholder support is crucial when building structural capital. It is therefore essential that communication channels are efficient as well as effective.
- It is difficult to implement an initial improvement to the structural capital. As a result, it is best to identify the one item that will have most impact on the widest audience and implement that first.
- Developing structural capital is time consuming.
- Benchmarking is valuable for a variety of reasons. However, ample time is required and it must be ensured that all interviewers approach the exercise from the same angle. Visiting the benchmarking partners one by one allows for additional information to be collected but it would be useful to meet with all the participants as a group either at the onset of the project or as a last review prior to releasing a final report.
- Changed services do not run smoothly immediately and even when clients are in the communication loop they, when under pressure, do not wish to make allowances for delayed service provision. Therefore it must be ensured that:

  - staff members establish and set a realistic delivery date when accepting a task;
  - a reliable feedback procedure is followed; and that
  - a preventive action 'learning loop' functions effectively.

- Given the opportunity and an appropriate mechanism, customers very quickly see the benefit and importance of continuous feedback. However, the mistake should not be made of thinking that all customers are willing to provide input. Neither should it be thought that feedback is only given when questionnaires are completed or when feedback interviews are conducted.
- It is essential to put in place mechanisms to regularly have contact with clients. Building relationships is a time consuming activity. It is therefore a

beneficial to make ample provision for the activity so that it becomes a priority action and is not left to chance. Relationship building also requires a good memory. Creating a memory jogger system as a tool to use in preparation for interactions with clients is valuable.

- It is important to recognise customers as customers and stakeholders as stakeholders. In an environment such as the one under discussion, it was, for example, easy to underestimate the stakeholder role of the labour union. Similarly, the front line staff members were acknowledged as colleagues but not readily recognisable as customers.
- As was mentioned in section 5.4.4.3 on page 5.46, with regard to the CSIRIS Information Services Forum, there are definite advantages to allowing a reputable stakeholder drive a formal feedback activity. Both customers and service providers see the stakeholder as an honest broker and the feedback provided is therefore of value for all. At the same time though, it is easy to allow positive feedback to overshadow what may appear to be minor indications of problems. When everyone else seems positive, it is a difficult task to stay 'honest' to a complaining customer.
- Access is needed to sufficient finances to buy-in external expertise. Expertise does not come cheaply. On the other hand, the creativity of individuals when they are motivated to see their plans come into being but are confronted with limited funds, should not be underestimated.
- Stakeholder attitude was definitely influenced by positive interactions with CSIRIS customers. It was a mistake not to build more strongly on the same model for IMPS stakeholders.

Maintaining and growing a management philosophy holds a different challenge to establishing a new one. As a general comment, if the implementation of intellectual capital management is to reach its full potential, it is necessary to ensure that all leaders buy into and are able to see the advantages of intellectual capital management early in the process. This means that the responsibility of driving the different implementation challenges could be shared.

Finally, although it may be difficult to measure, the visible growth in individuals could be regarded as the most gratifying of the rewards associated with the implementation of human capital activities. To witness the metamorphosis from an 'own-job-only' focused individual with hidden talents to a confident employee willing to share, participate and lead for the good of the wider group is a unique privilege.

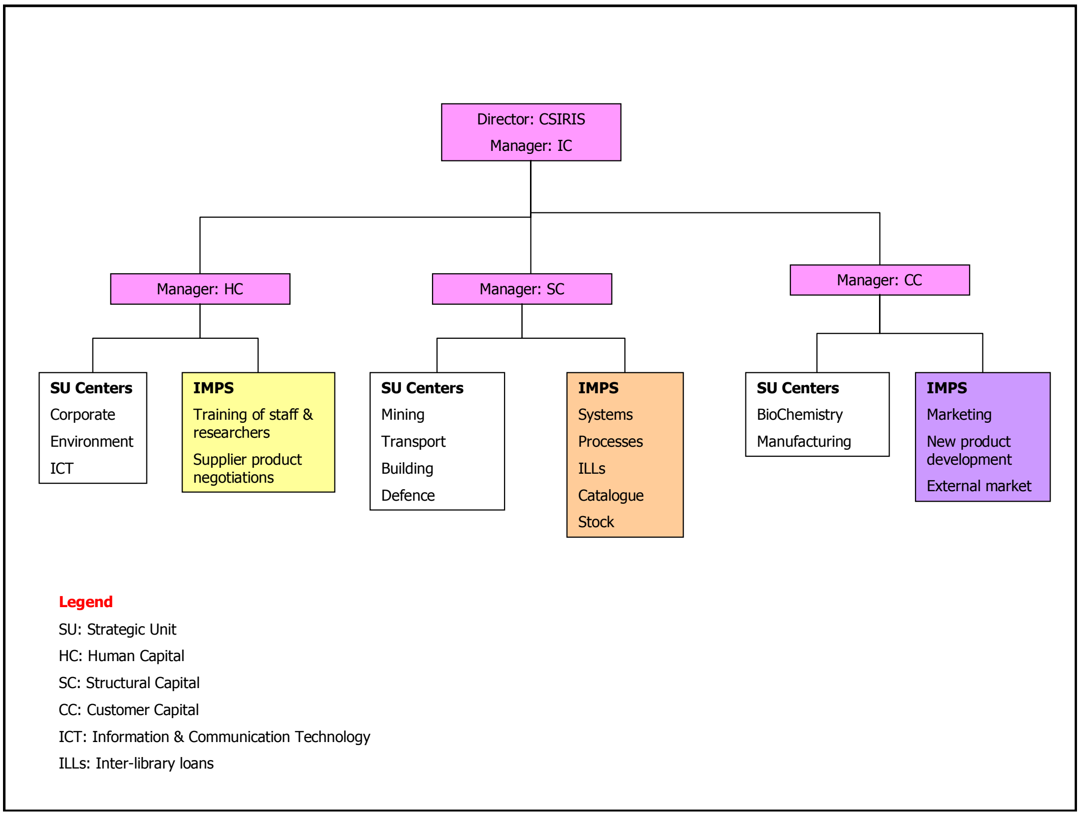
Based on the results achieved and the lessons learnt, it is possible to make certain recommendations in terms of the management of CSIRIS as a whole, as well as to make recommendations for further research. These recommendations are discussed in more detail in sections 7.4 and 7.5 below.

7.4 Recommendations for CSIRIS

Because of the visible positive effect achieved within the IMPS section, it is recommended that the intellectual capital management philosophy be rolled out to the front line and that the entire CSIRIS be managed using the same practices and principles. This would not only ensure that the 'knowledge worker' portion of CSIRIS be managed using the appropriate tools and approaches, but it should also ensure that gap between the front line and the back office be narrowed.

The perceived virtual silo/gap between the front and the back line staff members within CSIRIS was mentioned in section 6.5 on page 6.18. This needs to be addressed so that the group can function as a single entity. Structuring the service (and therefore the staff members) to address each of the capitals rather than the front and the back line may be very useful. It is recommended that the **management structure** be changed so that there is no clear management divide between the front line and the back office. This does not mean that the front line and the back office activities be intertwined. It rather means that each manager becomes accountable for both front line and back office activities. Figure 7.1 is a suggested structure using intellectual capital management as the point of departure.

Fig 7.1: Suggested new structure



The structure makes provision for a human capital manager who needs to co-ordinate the skills development activities as well as the training of end users. As a result, the negotiations with suppliers for electronic products should also fall within this person's responsibility portfolio as she (her staff) will be able to monitor customer needs best. The manager responsible for structural capital would also take care of the infrastructure SUs, while the manager responsible for customer capital would manage those SUs where most of the external client activity takes place. Obviously, the CSIRIS Director should share the responsibility for financial capital with the three managers.

It would also be useful to complete an intellectual capital report for CSIRIS as a whole. Besides the fact that it would set the CSIRIS benchmark, such an exercise would assist in identifying specific areas where 'gap bridging' needs to take place.

Before attempting to introduce knowledge economy management practice throughout CSIRIS, it would also be of value to review the work done by Davenport and Prusak (1997), see page 2.25, and Wiig (1997, p 402), reported on page 2.23, as these authors provide valuable insight into the issues that need to be faced in managing and building enterprise knowledge. Davenport and Prusak specifically allude to the importance of the environment in which the service is conducted.

In section 2.4.3.3 it was reported that Bontis (1998, p 65) and Jordan and Jones (1997, pp 392-393) stress an encouraging environment as the foundation to learning and the transfer of knowledge amongst staff. To create and maintain such an encouraging environment, it is seen as essential that staff and managers constantly communicate through both formal and informal channels. The review of staff satisfaction at regular intervals, using a variety of methodologies, paid dividends within IMPS and should be utilized throughout CSIRIS. Similarly, the use of the staff newsletter as a communication and knowledge-sharing tool is recommendable. Its value should not be underestimated.

The purpose of the sharing and communication would be to provide an enhanced service to the CSIRIS customers: not in the 'client-is-king' fashion of course but rather as a trusted partner. In this regard, as mentioned in section 2.4.1.1 on page 2.11, it would be wise to follow Senge's (1990, p13) advice and create a unit that has the capacity to shape its own future. This would require that CSIRIS as a whole:

- creates confidence in the skills and abilities of the CSIRIS management and staff;
- becomes more proactive in its understanding of its clients (current and potential) and their needs;
- develops innovative products and services to address the needs of the clients; and
- builds the infrastructure and relationships with reliable suppliers.

In terms of the leadership necessary to ensure that CSIRIS is able to shape its own future, the work of Eisner, et al., (2001) and Kotler (2001) is recommended. Eisner, et al., provides valuable insight into the lessons prominent leaders have learnt. In the case of the Kotler article, the reader is made aware of the interrelationship between management and leadership and the role each has to play in the knowledge economy work environment where proactive service is a prerequisite for success.

To be proactive, CSIRIS would need to move closer to the client and enlarge its capacity to collect and analyse feedback. There is a growing need for CSIRIS to test customer satisfaction. Within IMPS, the electronic Delphi worked well, as did the number of smaller satisfaction polls. These should be considered for use within this larger grouping. Once feedback has been collected, the response speed and the ability to ensure that problems are addressed, and that they do not occur again, will to a large extent determine client trust. In this regard it would be of use to again review the work done on effective organizational learning (Argyris, 1982 and Bontis, 1997), reported on in section 2.4.1.4. A proper market survey should also be done for **internal** customers. A validated market survey focuses the attention. It allows for the development of appropriate marketing material and the targeting of appropriate customers so that it becomes relatively easy to market products and services. Stewart's (1997, pp 155-163) advice in terms of moving close to the client was reported on page 3.49. This advice is worth following.

In terms of specific innovative products and services aimed at the internal clients it may be necessary to concentrate on the development of innovation skills. Authors such as Demarest (1997), Smith (1998), Sveiby (1998a) and Edvinsson (1997), who were consulted for the purpose of this study (see section 3.2.1 page 3.4), recognise the importance of innovation but, if CSIRIS is to take this advice seriously, it will be necessary to investigate the subject in much more detail.

CSIRIS would also need to move closer to its information industry competitors and partners. It may be beneficial to identify potential partners and competitors and to then make use of Porter's (1998, p 73) model (Figure 3.3 on page 3.38) to collect and analyse data about these competing and complementary services. Within IMPS the relationship with a single reliable partner (UP AIS) worked well. The experience gained should form part of such an analysis, as it will be invaluable in the fostering of relationships with further partners and with other sections within UP AIS. One example of a project that should be shared amongst partners is the analysis of supplier products. A comprehensive analysis of a product gives confidence in the selection of that product. The process is, however, time consuming and, because the exercise should be repeated annually (to take the fluidity of the products into consideration), it would be impractical to continue doing such a task as individual organizations. A second example can be found in the use of communities of practice. No truly successful communities of practice were developed within IMPS. That does not mean that communities should not be established. There is a suspicion that the communities within IMPS were too small to be viable. This needs to be investigated further and re-evaluating the advice provided by Brown and Duguid (2000), De Bruijn (2001), and Hackett (2000, pp 25-26), see section 3.4.1.1 on page 3.22, is a useful point of departure. Allowing partners to participate in the communities should be seen as a next step in the process.

The most important operational level advantage gained from the current partnership with UP AIS was the opportunity to benchmark operational activities. Being able to focus attention on the evaluation of core processes ensured that the evaluations were done in such a way that the evaluation and improvement of subsequent processes would be a relatively easy task. A similar process could, for example, ensure that the core front line activities could also be evaluated and improved.

One of the items identified for further attention within the IMPS environment was the use of the personal monitor. As was mentioned in section 5.4.3 on page 5.47, one of the aims behind the monitor is to create a truly transparent tool that could assist in the 'reward and recognition' process. In the process of re-evaluating the introduction of the monitor, it would be useful to again review the general reward and recognition suggestions put forward by the *American Management Association* (see page 2.63 for more detail) as these could provide valuable insight into actions that could be woven into the monitoring process.

In summary it could be said that intellectual capital management has been an appropriate management philosophy to use within the IMPS environment. A sound foundation from which to leverage a knowledge economy service has been established and it is now appropriate to roll out the principles and practices to the rest of CSIRIS. In this regard, the two most important recommendations to ensure success would be to eliminate the artificial divide between the front line and back office and to continue to build on the intellectual capital management foundation that has been put in place.

As can be deduced from some of the suggestions above, there is a need for research in terms of creating a knowledge economy relevant information service. Other recommendations for further research are reported below.

7.5 Recommendations for further research

The implementation of a relatively new management philosophy such as intellectual capital management allows for numerous additional research projects. Only some of those opportunities are identified here.

In section 3.2.2 on page 3.6, the work of Nonaka and Takeuchi (1995) was mentioned. They remarked that Westerners tend to emphasize explicit knowledge and the Japanese tacit knowledge. It would be interesting to establish how Africans perceive knowledge as no reference to that could be traced for the purpose of this research.

In discussing value chains (see page 3.12), the statement was made that it is presumed that customers perceived value not at the point where a paper document is handed over the counter but rather at the point when he/she finds a reference and is able to link to the full text. This presumption needs to be tested as it could provide the basis for viable business.

As indicated in section 4.3 on page 4.8, more research is necessary to identify the factors that affect the rate of learning and 'forgetting' in organizations. Factors favouring an accelerated rate of learning are a promising area of future research. This comprehension can allow investments in training and innovation to lead to better and quicker results than those achieved at present. Neither knowledge acceleration nor depreciation formed part of this research and were therefore not taken into consideration. Within the context of information service delivery such research would be applicable to both information workers and end users.

Stewart (1997, p 238) refers to research to effectively measure the true value of back office work. This research was within the context of financial services. It should be worthwhile to investigate the applicability of that technique to subsections within library and information services, more specifically areas such as ILLs where much of the activity could be seen as transactional.

In section 2.6.4 the statement was made that it is debatable if all cultures would be motivated through pay. It may be useful to establish what South Africans, or African information workers, regard as appropriate reward for work well done.

It would be useful to establish which life skills are required for knowledge era employees. Developing a programme to assist managers in recognising the difference between not having an appropriate life skill and not wanting to adapt to change would be useful. It would also reduce stress levels in employees if they realise that they could acquire the necessary skills to cope within the knowledge era.

It was indicated in section 5.1.2 that there are cost saving implications to being associated with the rest of Africa or consortia when negotiating supplier contracts. However, there are also consequences to being locked into such a grouping. These consequences need to be investigated and the results made available to the South African information community.

As part of the skills development activity (discussed in section 5.4.3 on page 5.31) a need to gain access to a cross-industry benchmark in terms of the requirements for beginner, experienced and mentor level skills was identified. Such a benchmark would allow for the development of skills at a national level and would also be of much use to training institutions.

As was mentioned on page 29 of Attachment 1, the cataloguing function needs to be reviewed objectively at national level. Such a review should address the applicability of the function but should also look at the role and the contributions that are made to national and international systems and the implications of these contributions to both the employer and the national system. In addition, because it was not the intent to do so at that stage, no concerted effort was made to consult literature to test if similar benchmark studies had been done internationally. To ensure that the benchmark is a truly valuable input to a national investigation, such research is required.

Innovation in information products and services is an area that needs focused attention. It would be to the advantage of the industry as a whole if research in this area could be done as a matter of urgency.

Similarly, both the 'brand name' and the image of L&IS and L&IS professionals suffer as a result of general perceptions in the private sector. Dedicated research, which could provide answers to the problems, is necessary.

Zickner (1996, pp 79-89) in her research (reported on page 2.40) established that organizations with 100 to 1000 employees are most successful at intellectual capital management. This finding is disputed and should be investigated further.

It should be fairly easy to identify the impact an information worker makes on the tangible value chain within the organization. No reference to such research was traced. The impact on the intangible value chain is even more important. Both these impact levels need to be investigated.

As a final suggestion, it was mentioned on page 3.59 that a relationship with suppliers that could lead to win-win solutions, where both suppliers and customers gain fairly from the negotiated contract, needs further investigation. Such an investigation should perhaps include a section on the international negotiation activities as well as the factors that need to be kept in mind when negotiating with different cultures.

7.6 Concluding remarks

Attempting to implement intellectual capital management within IMPS was the driving force behind much of the development that has taken place within the section. However, should it be necessary to repeat this exercise, it would be better to introduce fewer activities, especially during the initial implementation stage. This observation can be seen as the main reason for attempting to identify only the priority actions for the continuation of the IMPS intellectual capital development after this research has been concluded.

It is, however, not only the number of activities that needs to be controlled. The nature of the activities also needs careful thought. One has to ensure that the task is not larger than the result one wishes to achieve. For example, staff members do not record lessons learnt if beautifully written essays are expected. Neither do they consult those lessons if they have to sift through pages of text to find the essence of what to note. In the case of CSIRIS IMPS, lessons only became really useful once they were recorded in tabular and bullet-point format. 'Lessons learnt' is but one example. The same is also true for other elements of building structural capital.

Creating structural capital is also not the cure for all problems. Due to the consequences of historical practices, the South African work environment is challenging. Developing human capital remains of paramount importance. The perception is that it is essential to supplement human capital development activities with knowledge era life skills. Specific items that come to mind are personal finance, entrepreneurship, work ethics, quality and managing information overload.

The aspect of information overload highlights the importance of the relationship with the information service customers. Not enough is being done to get to know the customer and the world customers have to survive in. This is in all probability due to the fact that information workers have been playing the role of intermediaries for such a long time. It is sufficient for an intermediary to know where supplies and markets are and to then facilitate the process of moving the stock from the supplier to the buyer. Knowledge era information workers need to do more than that. It is not wise to indiscriminately contribute to the information overload customers are already experiencing.

Similarly the relationship with information suppliers needs more focused attention. The role customers should be playing in the development of supplier products should be built. The best way for that to occur is for the information worker to truly understand the product, the needs of the client and the capabilities of the supplier. The same is true when cultivating the relationship with information service stakeholders, as this requires skills and strategies that do not come naturally when previously the focus has been on the needs of customers. These skills and strategies need to be developed. The capabilities of customers to either assist in the process of building those skills and strategies or to directly contribute to the interaction with stakeholders should not be underestimated.

As a last remark, as with other knowledge era management philosophies, understanding that intellectual capital management is about 'management' and not about 'measurement' is fundamental to implementing intellectual capital management successfully … in any environment. If this is not realised, it defeats the purpose of intellectual capital management as it is very easy to slip back into a paradigm where the focus of attention is on the results achieved rather than on the activities necessary for the next growth phase.

7.7 Summary

This final chapter was used to report and reflect on the results achieved and the lessons learnt in the process of implementing intellectual capital management, to make recommendations for CSIRIS, to provide recommendations for further study and to make a number of concluding remarks. In summary, it could be said that intellectual capital management has been an appropriate management philosophy to use within the IMPS environment. It should therefore also be appropriate to roll out the principles and practices to the rest of CSIRIS. In this regard, the two most important recommendations to ensure success would be to eliminate the artificial divide between the front line and back office and to continue to build on the intellectual capital management foundation that has been put in place.