Chapter 2
The knowledge economy

> These days, keeping your nose to the grindstone is a big, short-sighted mistake (Stewart, 1997, p xvii).
>
> Though invisible and difficult to measure, knowledge and human expertise are starting to be seen for what they are: the source of value creation (Lank, 1997, p 406).

2.1 Introduction

What has become valuable in the work environment of the present belongs to what is known as the knowledge economy, the knowledge era, the knowledge age, the information age, the new economy and the new world. For the purpose of this study, the phrase knowledge economy will be used to include all of these terms. The general interest in the knowledge economy and its associated management philosophies, knowledge management, learning organizations and intellectual capital management, did not start as a whim. It came about as a direct result of the general evolution in the way in which work is valued. The shift from an agricultural economy to an industrial economy (and their associated work value systems) is at present relatively easy to recognize and understand. What is not yet as clear to most, is the impact of the shift from the industrial to the knowledge focused economy. There is, however, little doubt that the implication will be more intense and have a larger impact than that of any previous evolutionary step.

The knowledge economy, which is described in some detail in section 2.2, is typified by an oversupply of information. It is ironic that the concern with information overload is also contributing to the fact that individuals are swamped by information and that managers are unable to assimilate and use information that they require to run their businesses efficiently (Davenport and Prusak, 1997, p 134; Quintas, Lefrere and Jones, 1997, p 386). There is, for example, an abundance of literature on each of the knowledge focusing management sciences. Just as is the case with other sciences, much of the literature is repetitive. Each author uses a variety of catchphrases, jargon terms and models to convince individuals that the ultimate answer and solution to their confusion and information overload problems have been found. However, in fact each of the subject areas has only a hand full of experts. This is also true for literature on the knowledge economy, knowledge management, learning organizations and the focus area of this research, intellectual capital management. Each of the subject areas mentioned is discussed in more detail within this chapter. The crux of the matter is that experts writing about each of the management sciences indicate that it is no longer sufficient for the organization to focus on the company's bottom-line only. It is also no longer appropriate for only a select group to be responsible for the company as a whole. Companies no longer exist in isolation. An approach of looking at the whole company within its environment, and in conjunction with its suppliers, competitors and especially its clients, appears to be more appropriate.

It is difficult, and for the purpose of this study not necessary, to pinpoint the exact time when intellectuals realized the importance of a more holistic approach to managing the work environment. Of more interest is that it is clear that there was some form of serendipity in the development of the literature associated with the discipline.

Logically much of the literature relating to a more holistic approach to business management overlaps. Although it is done at times, the purpose of this study was not to concentrate on the differences amongst the management sciences. It is rather to establish the suitability of intellectual capital management principles within

a typical library and information service (L&IS) environment. Where it was found that literature, relating to the knowledge economy in general or knowledge management and learning organizations specifically, was relevant it was included to complete the study. This is of course in line with Obeng's (1997, p 115-119) observation that the knowledge economy requires one to rather use 'and' than to use 'or', also when selecting appropriate management tools.

It is not to say that all the valuable management tools and techniques that were previously of use are suddenly useless. It is just that the knowledge economy incorporates new dynamics, new rules, and new drivers of innovation (Jordan and Jones, 1997, p 393). As a result, the managerial challenge is to improve the processes of knowledge acquisition, integration and utilization. The only way that is possible is to understand how knowledge is acquired and harnessed within the modern organization. Lank (1997, p 409) states that it is unfortunately not a task that can be given to a person or section of the organization. To be successful, the knowledge economy requires that true cross-functional teams, that are not led from only one specific function within the organization, take up the responsibility for their own well being.

Even though it was found that very few authors specifically address the impact of the knowledge economy on the library and information profession, there is no doubt that information services need to adapt to stay relevant within the knowledge economy. It is therefore logical to assume that the management sciences associated with the knowledge economy would also be appropriate to use when managing a L&IS. The overall purpose of this study is to investigate the suitability, applicability and impact of intellectual capital management principles within a typical information support services environment. This chapter reflects the result of a literature review to:

- establish in detail what the knowledge era, knowledge management, learning organizations and intellectual capital management are;
- establish what the knowledge economy trends are and to speculate on the impact of these trends on the work environment in general;
- briefly look at the impact of the knowledge economy on the role of both the employer and the employee;
- understand the role of the leader in the new economy; and to
- specifically look at the possible impact of the economy on both the information service and the information professional.

2.2 Defining the knowledge economy and identifying visible trends

The knowledge economy refers to the knowledge work-based economy. The idea of knowledge work has been around for some time. Mintzberg (1983, in Garrick and Clegg, 2000, p 279) wrote extensively about knowledge intensive firms, outlining differences between knowledge intensive organizations and professional bureaucracies. In essence, this means (according to Shanhong, 2000) that the knowledge economy era is driven by a company's, and in effect an individual's, ability to effectively *identify, acquire, develop, resolve, use, store, and share*

knowledge. It is also driven by the ability to **apply** the tasks listed above to create an approach to:

- transform and share both tacit and explicit knowledge;
- raise innovation capability; and
- utilize the combined wisdom of the team.

It is not enough to acknowledge knowledge as an asset. Authors such as Mullen and Willigan (2000) make it clear that successful corporations of the 21st century will not be able to continue to rely only on the old levers of competition: labour, capital and land, for their success. Rather, they will have to manage these tangible assets along with intellectual assets and intellectual property: patents, trademarks and technology. Some managers may still think that these issues do not relate to their specific circumstances. In contrast, authors such as Jordan and Jones (1997, p 392-393) state that the strategic importance of knowledge assets extends to all firms, not just to those that are knowledge intensive. For example, cars have more microchips than sparkplugs; new aircraft are designed entirely by computers; lathes, drills and dies used in factories are numerically controlled; and only 20 % of the costs associated with Levi jeans go toward making the denim garments while approximately 80 % of the costs go into information (Stewart, 1997, pp 14-15). Stewart (1997, p 3-5) also used the progress made with the development of a beer can, from a seven-ounce steel can in the 1950's to the .48-of-an-ounce can used today, to illustrate the benefit of applying intellectual ability to an industry as a whole. As a last example, Groth (1994, pp 22-23) elaborated on the effect of 'mind capital' on the agrarian sector. New equipment, techniques and plant varieties have enabled a few to feed many.

From the examples above it cannot be seen where exactly knowledge has the biggest impact. It can, however, be assumed that mind capital or knowledge impacts on each stage in any given process. It makes 'efficiency and effectiveness' decisions relating to the end product, method, and resource allocation possible. In general an improvement in the value of the product-cost of the resource ratio has numerous benefits. Generally, an increase in this ratio contributes to an increased living standard. Efficiency gains, of course, free human, financial and tangible resources.

Mind labour also provided for new and more efficient techniques in farming. This does not imply that no physical labour is necessary when farming. Physical labour makes the application of the new techniques and practices possible. However, the success of techniques and application of new practices reduced the number of people required for physical farm labour.

Where the impact of knowledge on labour is concerned, authors may want to lead readers to believe that they have discovered the ultimate Eureka-factor. This is not the complete truth as intellect, knowledge, skills and experience, in all their variety of guises, have always been at the foundation of business. The most important visible trend is that employees now are realising the true value of their skills and competencies and are seeking the appropriate acknowledgement and development

opportunities. Similarly employers, realising that they no longer are able to control their most important assets, are seeking ways and methods to retain at least part of their investment in those assets. It is actually the first time that an employer has both the competitive incentive to manage intellectual output and/or knowledge as an asset and through the exchange of money for other opportunities, they have the means available to do so (Lank, 1997, p 406).

Trends and predictions

According to Jooste (1997, in Wiig, et al., 1997, p 84) there are two basic forces that are driving the visible trends in the knowledge economy. The one is globalisation and the other technology. As a result of these driving factors, Jooste (1997, in Wiig, et al., 1997, pp 84-101) identified the following as typical changes that have occurred as a result of the knowledge economy:

- The law of economics has changed. Knowledge and information have become the most valuable commodities.
- The very nature of 'work' has changed. There is a major shift to self-reliance and lifelong learning.
- The drivers for business success have changed. The new formula for successful business is: ½ x 2 x 3 = P+P (half as many people getting paid twice as much and producing three times as much equals profit and productivity). This is said to explain why attitudes towards roles, responsibilities and career paths have changed.
- The basis of competition has changed. Neither the competitor nor the competitive space is what it used to be.
- The concept of an 'organization' is changing. Organizations are flatter than ever before and employee teams need no longer work in the same geographical space.
- Personal values are changing. This is resulting in employers having to appeal to people's personal value systems when attracting them to the organization.
- Organizational values are also changing. It is no longer necessary to own and control everything.
- Products are changing and entire new products and services are developing.
- Client expectations are changing. Clients are expecting value addition in the products they require and services that provide quick access to reliable analysed information are in high demand.

Besides the changes identified by Jooste a variety of trends were collected and a combined list was created from the work of Fine (1998, pp 3-15), Garrick and Clegg (2000, p 279), Groth (1994, p 27), Jordan and Jones (1997, pp 392) and Lank (1997, pp 406-407). Significant trends to take note of within the current business environment are the following:

- the speed of change is in continuous acceleration mode;
- the business environment is more competitive than ever before;
- competition is global and very often from very unlikely competitors;
- the state of competitive advantage is very temporary;

- the shift to service-based businesses is a significant factor to keep sight of;
- the boundaries of traditional business have become fluid (supermarkets becoming bankers);
- the shift from a large, loyal staff body dedicated to a large, very often paternalistic corporate to the mobile, individual members of a virtual workforce is a reality;
- a huge qualitative change, brought about by the ability to produce, reproduce and communicate vast amounts of data and information electronically, is in progress; and
- technologies that enable global knowledge-sharing have been and are being developed and improved almost daily.

Several predictions about the knowledge economy work environment exist. Some of these are listed below:

- In terms of numbers of people, the ratio of physical/mind labour will continue to decline. However, physical labour, that offers an increasing value generation to labour cost ratio, will remain in demand.
- It is expected that mind labour will increasingly recognize the importance of specialized units of physical labour. Therefore, for the fortunate few, cost and value of a unit of physical labour will be acknowledged and increased appropriately.
- However, a large, and in fact growing, segment of the labour force will not be willing to adapt to the required changes. Therefore, the levels of unemployment will rise except in countries and regions that successfully adapt by altering the nature and characteristics of their physical workforce.
- The need for physical labour to develop skills and knowledge essential to allow for changes in application will accelerate.
- The 'system' will resist changes in the goals and methods of educating or re-educating the workforce.
- Relatively few of those currently in the physical labour segment will successfully make the transition to higher skills and knowledge. Instead, a 'new' physical labour force will displace them. The 'new' physical labourers will have acquired the skills and knowledge base to keep them employable.
- An exponential growth in the temporary workforce can be expected. In some cases industry will favour immigrant labour since they will be more flexible in attitude and have lower fringe costs. The greater demand for migrants will, however, foster increased resistance to migrant workers and generate greater social unrest. But, countries that successfully transform existing physical labour to 'new' labour will enjoy amplified benefits: they will have less social unrest and lower political risk; and they will also avoid the monetary and social costs of high unemployment.
- Mind labour will flow to those environments that offer the greatest freedom and rewards.
- Lastly, it is predicted that in general countries that provide an environment and culture attractive to mind and new physical labour will enjoy rich rewards.

The listed trends and predictions reflect what Obeng (1997) identified as the *New World*. He (1997, p 213) is of the opinion that the *New World refers to a set of conditions that determines that the business environment behaves in a complex and chaotic manner. The New World is associated with business environments where organizations actively pursue change, are global in terms of competition and makes use of information in order to ensure that most communication to customers, suppliers and employees is fast, global and accurate.*

There are of course knowledge economy trends that refer specifically to information services. These are mentioned in section 5.1.2 on page 5.7. What is clear from all the listed trends and predictions is that the workplace in general and information services specifically will never be quite the same again. Similarly, and because of the work environment changing, workers will never be the same again. In the new economy both the intellectual as well as physical contribution of the members of a business, to all its activities, will be paramount. Any manager or leader ignoring this fact stand a chance of being taken by surprise when it can be least afforded. In the next section the actual impact of the trends and changes on the workplace will be discussed in more detail.

2.3 Impact of the knowledge economy on the workplace with Affärsvärlden as example

With regard to the workplace of the future, the following predictions were reported by Duffy (in Wiig, et al., 1997, p 26) to have been made in a *Business Week* of 1994:

- the office could be anywhere;
- No more unconditional lifetime employment;
- professional, managerial, technical and service jobs will gain in number while crafts, operators, labourers and clerical jobs will diminish in number;
- better technology, better processes and fewer but better trained workers;
- an increase in the number of part-time workers who will all be striving to be full-time workers;
- job skills, like businesses, will be ephemeral. Employers will assume responsibility for constant re-skilling of employees but the latter will have to assume responsibility for their own careers;
- younger people will find jobs harder to obtain and keep, will need more skills than today and will, therefore, have to be much more tough-minded and independent; and
- global competition will force a constant search for ways to improve productivity at the cost of more uncertainty in the workplace.

At that time these predictions were regarded as science fiction and, although it is only eight years later, every single one of these predictions have materialised. The impact of new technology was predicted but what was not anticipated at the time is how perception of time and geography would be impacted by the wide scale use of the Internet.

In the fast moving knowledge economy the rules guiding customer relations, competition, and the employment relationship change daily. If companies, sub-sections of companies and indeed individual employees want to survive they must operate as adaptive systems and anticipate change. Hackett's research (2000, p 12-13) provides detail of companies reporting that they are able to:

- make decisions faster and closer to the point of action (increased sales/faster development);
- overcome internal and external barriers (reduce costs/improved customer relationships);
- provide more opportunities to innovate (no re-invention of the wheel/save costs);
- reduce product development time; and
- enhance customer relationships when they better utilize knowledge.

When a competitor is able to report that he is able to do so successfully and your own company is struggling to perform, the competitor has a distinct advantage. Fortunately, as companies look for new ways to compete effectively they are recognizing the importance of identifying or rediscovering assets they already have but are not using to their full potential. Quintas, Lefrere, and Jones (1997, p 385) as well as Roos and Roos (1997, p 413) report that management theory has gradually accepted that 'hidden' assets (knowledge of employees, but also customer and supplier relations, brand loyalty, market position and knowledge) increasingly will play a major role for the survival of companies. Notably, these assets are employees and information, but may also include patents, copyright, brands, research and development, licensing opportunities, innovative use of assets, such as databases, and so on. The total asset package provides opportunities to innovate, to cut costs, to save design time, and to reduce time-to-market. Perhaps the best way to illustrate what this means is to look at one case study in more detail.

Affärsvärlden example

Sveiby's (2000a) case study of Swedish trade journal publishers shows the clear competitive advantage knowledge-based firms have over those with a more traditional strategy. When Sveiby joined his company (the publisher Affärsvärlden) in 1978 it was under threat of closure but by 1995 it had become the largest trade press publisher. The company then published seven journals and had a staff of 150: 80 editorial, 50 in sales and marketing and 20 in administration. In contrast some of the largest competitors had shrunk in terms of staff, turnover as well as number of publications. The reasons Sveiby provides for the business success can be found in the way:

- staff members were managed;
- information was shared;
- technology was used; and
- customers were treated.

Each journal had its own editor and professional team but all teams shared the sales, marketing and administrative staff. In effect, the company had a variety of different climates and cultures, remuneration systems, motivation methods and working hours – as was agreed upon by the various team members. The editors were the ones binding the company together. Although the editors were running their magazines as independent business units and had profit responsibility, they were also part of the top management team. They had to interact with administration and marketing and were not able to withdraw to do their own thing. Organizational structure was more like a network of independent teams, albeit sitting in the same building, than a single entity. This may seem confusing to anyone using the traditional industrial perspective on management but what was established was that the top management team members had to devote most of their time to other issues than what was common amongst them. They had to be the 'glue' that held the fuzzy organization together. They had to initiate and encourage the flow of information and knowledge between the professional teams. The issue of knowledge transfer between the various teams became a crucial top management issue, as well as how to interact between, for instance, the marketing department and the editorial teams (Sveiby, 1995).

A considerable amount of internal information was needed in order to maintain the trust between the members of the organization and projects. The result was that journalists were able to use each other's fields of expertise for creating new angles on subjects. His experience at Affärsvärlden led Sveiby (1995) to the conclusion that creativity cannot be managed in organizations in the way that it could be done in the past. He recommended that managers learn how to manage a milieu encompassing both standards and creativity. Sveiby (2000a) therefore identified two further features that contributed to Affärsvärlden's success:

- In the first instance there was high editorial productivity, which involved the following:
    - recruiting highly educated staff;
    - creating a collaborative climate;
    - building a flat organization;
    - investing in new technology; and
    - computerizing analytical models – automating the gathering and analysis of statistics.
- Secondly, there was a low staff turnover, which was seen as a sign of staff satisfaction.

To refer back to the new technology and the analytical models: Sveiby (2000a) reported that he and his team were able to adopt and implement new technology at least one year and sometimes two years faster than their competitors. They were able to recognise faster that the technology would revolutionize their industry. The time required for business analysis was gained from the computerization of their analytical processes. This ensured that information was gathered automatically and that the analysis occured much faster.

Although Sveiby (2000a) did not specifically report on the interaction with customers, it is relatively safe to assume that the analysis of the business included continuous feedback from their most important clients and stakeholders. The feedback was gained from:

- seminars for readers;
- industry seminars;
- articles published in the journals;
- sharing and rotating jobs (staff members) with key customers;
- piggy-backing at interviews;
- focusing on high image customers; and
- building solid relationships with the best executives within industry.

From the Affärsvärlden example it can be seen that Sveiby's management team was an early leader in what is today known as the acceptable way in which to run successful knowledge businesses. The model that was developed as a result of Sveiby's experience at Affärsvärlden played an important role in defining what actions to take within the context of this research. It is therefore mentioned again in sections 3.4 on page 3.15 and 5.4 on page 5.16.

2.4 Relevant management philosophies

A variety of management theories have been developed in an effort to find the most effective way to harness the opportunities and challenges of the knowledge economy business. Three of these are discussed in more detail below.

A few years ago most people thought that the theory of knowledge belonged exclusively to the realm of a few philosophers and religious thinkers. The early use of the term knowledge was to describe the dynamic effects of an individuals' intellect. When managers and consultants started using the term, it became more focused on organizational development. For the last decade or so, there has been large-scale exploration into 'knowledge' by the business world's sharpest minds and practitioners. They have put 'learning organizations', 'knowledge management' and its close relation 'intellectual capital management' into practice on a global scale. Sveiby (2000b), who writes on both knowledge management and intellectual capital management, sees the proliferation of knowledge management literature as a LINUX experience. For, just as the LINUX developers continuously improve and add features to their product (by making use of global communication networks), management experts around the globe are all connected and contactable via the Internet. This leads to constant interaction and improvement to the theory of people and business management.

It is therefore not unexpected that there is considerable overlap in the scope of learning organizations, knowledge management and that of intellectual capital management. In brief, learning organizations focus very much on the human activities associated with the creation, sharing, development and deployment of knowledge for competitive advantage. Knowledge management has tactical and

operational perspectives. It is more detailed and focuses on facilitating and managing knowledge-related activities, such as creation, capture, transformation and use of knowledge assets. Its function is to plan, implement, operate and monitor all the knowledge-related activities and programmes required for effective business operation management. Lastly, intellectual capital management is focused on building and governing intellectual assets from strategic and company governance perspectives with some focus on tactics. The main purpose is to take overall care of all the company's intellectual assets. All three of these theories are fundamental building blocks – even cornerstones – in the effective management model for the 21st century. Even so it is also the contention that none of these should be pursued in total isolation. They should also be interwoven with other management considerations (such as change management and strategic management) to ensure a sound, balanced and competitive business.

What follows is a more detailed description of each of the three identified management theories. The intention remains to provide just a broad overview rather than an in depth analysis of each of these.

2.4.1 Learning organizations

Peter Senge, regarded as the father of the theory on learning organizations, published *The fifth discipline* in 1990. The book came about as a result of work done over a period of more than 20 years. This work highlighted the fact that if an organization's leadership as well as its staff members choose to do so, the rate at which that organization learnt could not only ensure the organization's survival, it could also turn the organization into the place all members of staff would choose to want to spend their energy and creativity. This is a far better goal than to use learning as a tool because it is seen as the biggest and only sustainable source of competitive advantage.

2.4.1.1 Background

Senge (1990, p 13) states that most people think that learning is synonymous with taking in facts. In his opinion, learning involves a fundamental shift or movement of the mind, which is much, much more than memorising or even collecting facts. He sees a learning organization as an organization that is continually expanding its capacity to create its own future. From this as well as from the work of Hackett (2000, p 11) it was established that organizational learning is the process that enables an organization to adapt to change and move forward by acquiring new knowledge, skills, or behaviours, and thereby transforming itself. It is therefore fair to say that in successful learning organizations:

- individual learning is continuous;
- knowledge is shared;
- the company culture supports learning;
- employees are encouraged to think critically and to take risks with new ideas; and
- all individuals are valued for their contributions to the organization.

2.4.1.2 Definitions

Malhotra (1996) followed Senge's lead and defined a learning organization as 'an organization in which you cannot not learn' because learning is so woven into the fabric of its life. He sees it as 'a group of people continually enhancing their capacity to create what they want to create'. Put differently *organizational learning can be seen as the ability of an organization to gain insight and understanding from experience through experimentation, observation, analysis, and a willingness to examine both successes and failures* (McGill, et al., 1992 in Malhotra, 1996). However, the entity only learns if, through its processing of information, the range of its potential behaviours is changed. According to Huber (1991, in Malhotra, 1996) it is useful to remember that:

- learning does not need to be conscious or intentional;
- learning does not always increase the learner's effectiveness, or even potential effectiveness; and
- learning does not necessarily result in observable changes in behaviour.

2.4.1.3 Major contributions relevant to this study

Most of the work consulted for this research dates from the era post-1997. It is, however, the work of Senge (1990) that became a personal inspiration for this study. The way in which his ideas were packaged first led to the realisation that it is not suitable to focus on any one particular management philosophy.

Senge (1990, pp 6-11 and 363) states that learning organizations can only be true learning organizations when at least five disciplines are at the same state of readiness. He anticipates that other disciplines may still develop and would in all probability be added to the list but, currently, the five disciplines are the following:

1. **Systems thinking** – which requires that the business is seen as one interrelated entity where every single action is related to or has an impact on another; and where it is possible to realise that if part of the business is not functioning properly, it will inevitably cause another part of the organization distress.
2. **Personal mastery** – which starts with clarifying the things that really matter to each and every individual within the organization and practising and learning to see current reality more clearly. Continued learning is seen to deepen vision, to aid objectivity and to ensure focused energy.
3. **Mental models** – which refers to an individual's ingrained assumptions, generalizations and images that influence the way that individual understands the world he lives in. The trick is to surface these models and allow staff members to expose their thinking effectively and to make their thinking open to the influence of other thinking.
4. **Building shared vision** – which involves building a shared picture of the future and getting people to commit to rather than comply with that vision.

5. **Team learning** – which is when individuals start with dialogue and learn to suspend assumptions when they genuinely start thinking together as a unit.

It appears that Senge's disciplines can be divided into two groups. The one group contains systems thinking, personal mastery and mental models while everything else falls into the second group. The reason is that it appears not to be possible to see the system as a whole unless some degree of personal mastery has been acquired and mental models can be surfaced and evaluated objectively. These disciplines work very much at the individual level. Building shared vision and team learning can almost be seen as the tools that bind these individuals together.

The learning organization picture would not be complete if Senge's disciplines are not linked to the 11 laws of the disciplines - for these laws provide the key to understanding why learning is successful … or not. Whenever a strategy or process did not work during the implementation phase of this study, it was usually possible to link it back to one of the laws of Senge's disciplines. The laws, as identified by Senge (1990, pp 57-67), are:

1. Today's problems come from yesterday's solutions. Often a solution shifts a problem from one part of the organization to another. In addition, those who solved the problem and those who inherit the problem are usually not the same people. As a result the symptoms are treated and not the cause.
2. The harder you push the harder the system pushes back. This law deals with over-compensating in order to ignore the facts. In systems thinking this is known as compensating feedback. To the man on the street, it is known as throwing good money after bad.
3. Behaviour grows better before it grows worse. This law is linked to compensating feedback. Treating the symptom always provides relief in the short term but in the long term the problem becomes worse.
4. The easy way out usually leads back in. It always is easiest to try and apply familiar or standard practices to try and solve a problem. The lesson to learn is that each problem is unique and needs a unique solution … even if it is possible to apply some of the learning from a previous experience.
5. The cure can be worse than the disaster. This is also known as 'shifting the problem to the intervener' or 'passing the monkey'. The worse part is that the intervener gains power every time he takes on the problem. In the end it is extremely difficult to function without the intervener. So, for example, many managers prefer to pass their human resources problems to a human resources department. This gap between manager and staff then becomes the root cause of a multitude of learning obstacles.
6. Faster is slower. It is best to remember that optimal growth rate and sustainable growth rate are not equal. Each system has an intrinsic growth rate with which it can cope. The trick is again to realise that there is not just one solution to all problems.
7. Cause and effect are not closely related in time and space. One is accustomed to thinking that an action has an immediate re-action. This is true but the full reaction very often is clear only when a large chunk of time has lapsed.

8. Small changes can produce big results – but areas of highest leverage are often the least obvious. As is seen with a ship's rudder, a relatively small 'part' is sometimes able to leverage a large mass. At the same time when one watches a ship turn it is difficult to recognise that the rudder is doing the difficult work.
9. You can have your cake and eat it too – but not all at once. Very often it is thought that one option excludes another (for example when you want to deliver quality you cannot reduce costs). The real leverage lies in seeing how both options can be accomplished. It may need one to focus on one element first (for example quality) but over time the other (lower costs) is also achieved.
10. Dividing an elephant in half does not produce two small elephants. This is particularly true during times when companies are outsourcing what they believe are non-core elements of the business. When only one aspect of an organization is visible from the angle it is approached, the full impact of actions taken will not be visible.
11. There is no blame. Within systems thinking there is no enemy outside the company. All are part of the same system and the cure for the problem lies in the relationship that is built between the role players.

Having said that, the most obvious question to ask is: 'How does one create a learning organization?' Some of the implementation ideas collected from a number of authors are reflected on in the next section.

2.4.1.4 Implementation strategies

There is little doubt that Senge's ideas made sense to a large number of senior executives. As a result, most organizations are putting strategies in place to foster, manage and exploit internal learning and knowledge. Bontis (1998, p 64) and also by Robinson and Kleiner (1996, p 38) confirm this statement. These authors report that firms that are thriving in the new strategic environment see themselves as learning organizations pursuing the objective of continuous improvement in their knowledge assets. Bontis is of the opinion that competitive, technological, and market pressures have made continuous organizational learning a critical imperative in global strategy effectiveness. As a result organizations that have been unable to enhance their knowledge assets have failed to survive and are left wondering what the fuss is all about.

It was established that successful organizational learning is said to occur in at least four stages, namely:

- information acquisition – when the organization becomes aware of new or different information;
- information distribution – when the information becomes generally known;
- information interpretation – which is the stage when information becomes knowledge; and

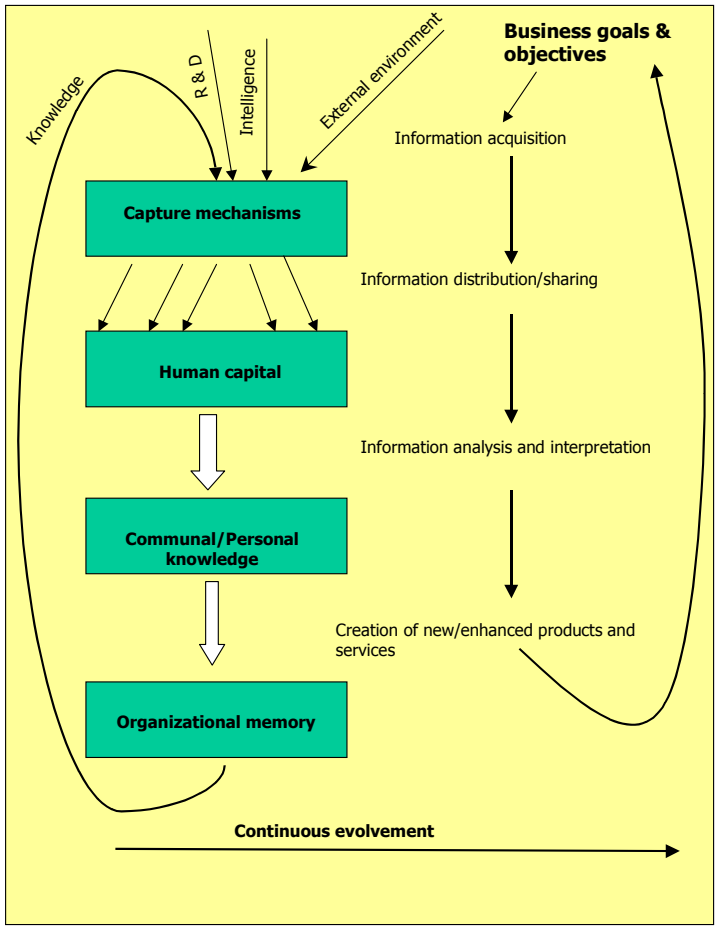
- organizational memory – which is when tacit knowledge is turned into explicit knowledge and therefore again becomes information that should be utilized during the acquisition phase.

To illustrate what is meant by the stages mentioned above, the works of Bontis (1998, pp 72-73); Hackett (2000, pp 16-17), Lank (1997, pp 406-407 and Malhotra (1996) were used as a basis to create Figure 2.1 on page 2.16. From the figure, it can be seen that information is gathered from a variety of sources. The gathering of information is obviously in line with the organization's goals and objectives. Capturing is at times formal – when databases are augmented, and at times informal – when data is not captured in any given system. Only the most obvious, such as scanning the external environment, deliberately collecting intelligence, doing research and development and making use of knowledge created within the company, are mentioned. The information gathered and captured is of little use if it is not distributed and shared amongst the employees (human capital) of the organization because it is at this stage that connections are made and information is analysed for trends and new developments. Once that is done a 'knowledgeable stage' is reached from which existing procedures can be improved and new products and services can be developed. The tangible knowledge then needs to be identified and captured. Capturing can again be via a database but it can also be in report format or just a list of lessons learnt. Once that task is completed, the knowledge can be re-used as information gathered to ensure continuous evolvement or learning of the organization as a whole.

As a result of this continuous process the following characteristics should be possible to identify:

- continuous activity;
- individual learning transformed into organizational learning;
- no boundaries in the sharing of information across the whole organization;
- a clear understanding amongst all about the creation, sharing and managing of information to meet specific business objectives;
- continuous improvement; and
- benefits that are continuous and to all stakeholders.

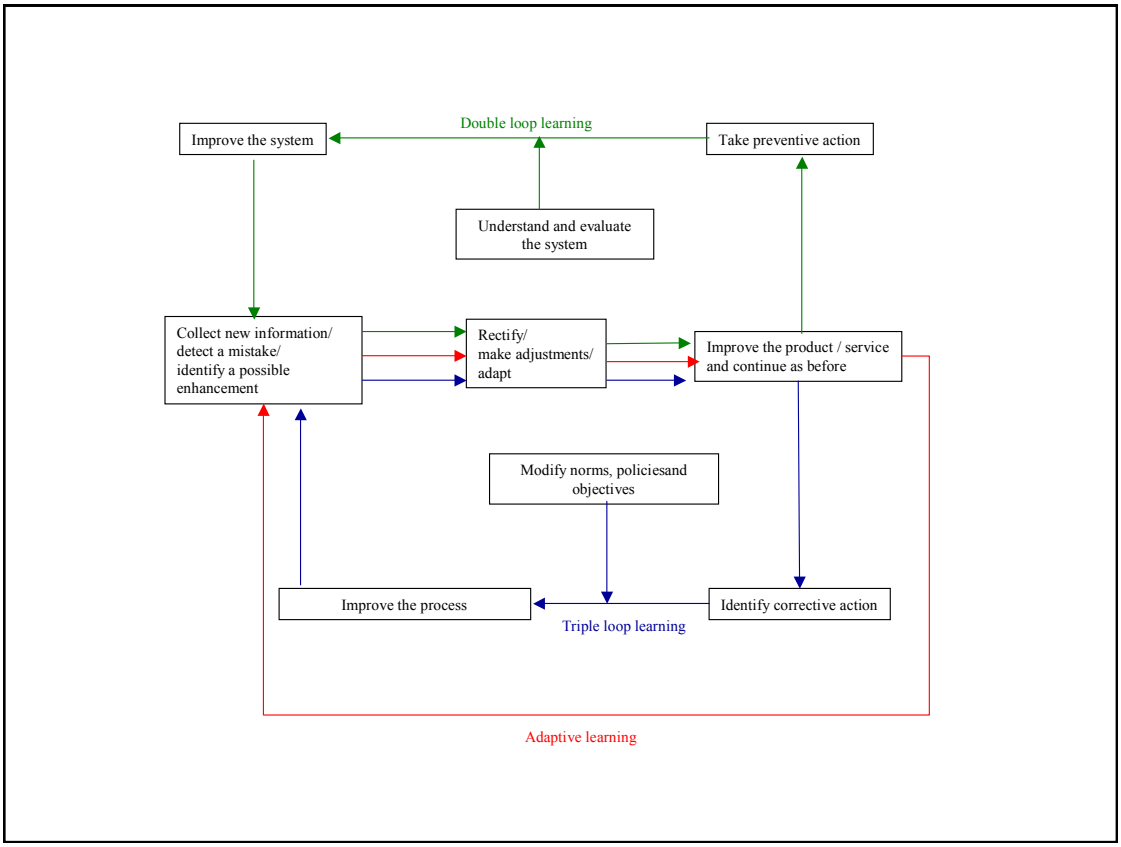
Fig 2.1: Flow of information within the learning organization



This model is of considerable value when the company's learning ability is in a mature state because, to assume that all learning is of equal value, is futile. Argyris and Schon (1978, in Bontis, 1998, p 72) identified three types of organizational learning, single loop, double loop and deutero learning. Figure 2.2 on the next page indicates these loops as coloured lines. Most businesses follow single loop (red line) learning that merely detects and corrects problems as soon as possible so that the organization can continue with their regular activities. Adaptive learning or single-loop learning focuses on solving problems in the present without examining the appropriateness of current learning behaviours. Adaptive learning is about coping. Adaptive organizations focus on incremental improvements, often based upon the past track record of success. They do not question the fundamental assumptions underlying the existing ways of doing work. Generative Learning or double-loop learning (green line) emphasizes continuous experimentation and feedback in an ongoing examination of the very way organizations go about defining and solving problems. Double loop learning not only involves the detection and correction phase of problem resolution, but also attempts to modify underlying norms, policies and objectives. Triple loop or deutero learning (blue line), unlike adaptive learning, requires new ways of looking at the world. It is the most advanced of the three and

involves understanding the whole process. This links back to Senge's system theory discipline. Although the duetero concept is intuitively appealing, Malhotra (1996) states that many managers have yet to find a practical means to adopt the deutero-learning process. This is especially important within the context of this research because he predicts that managers who are not able to make provision for deutero learning will struggle to grasp and develop the full scope of intellectual capital.

Fig 2.2: Effective organizational learning – based on the work of Argyris (1982, p 163 and Bontis, 1998, p 72)



These learning loops were taken into consideration when it was decided to redesign the inter-library loans (ILLs) and cataloguing processes. Unfortunately the effect was not measured. An attempt is also being made to re-design the access to information system as a whole. This has specific relevance in terms of the move from paper to electronic sources. From this experience it is possible to say that the practicalities of duetero learning are as difficult as Malhotra (1996) reported, mainly because of financial and organizational constraints. These constraints are often beyond the learner's immediate control. What is important, however, is that the whole system is evaluated to identify the necessary changes. Implementation of these changes can then be done in stages as and when possible. It also remains important that learning is captured along the route of development or learning because learning and knowledge only become truly valuable when they are shared and preferably captured in tangible format. The capturing and packaging of knowledge is the focus area of the next management philosophy examined. First, a brief overview of this section of the study is given.

2.4.1.5 Learning organizations in brief

A learning organization is an organization in which the individual experiences learning and development as such a positive drive that it becomes an internalised activity … almost a craving to learn! Peter Senge's work, on the disciplines required for developing a true learning organization, is central to the development of literature relating to the topic. In particular the laws associated with the disciplines provide clues as to what one needs to keep in mind when leading in the learning organization. The crux of applying learning organization theory is that one should progress beyond the first stage or loop of learning where newly acquired knowledge is collected and applied. In a second phase, knowledge is used to improve individual processes while in a third phase acquired knowledge is utilized to redesign systems in order to have improved all the processes relating to the system.

2.4.2 Knowledge management

Sveiby (2000a) tells us that knowledge management is perhaps not an ideal term to use. He is not sure what this 'thing' will be called but reminds us that it is not up to us to decide that right now. (After all, the dramatic changes in the world economy experienced by those living in the late 18th century were not labelled 'The Industrial Revolution' until 100 years later.) For the time being though, 'it' is known as knowledge management. Because knowledge management has been identified as a 'hot topic', it is not remarkable that there is an oversupply of information relating to it. What is remarkable is that, as was reported by Demarest (1997, p 374), the call to knowledge is being sounded at all levels of economic analysis:

- at the macro level of global markets and economic trends:
- at the meso level of the inter-firm networks and value chains that construct and deliver value to customers; and
- at the micro level of the firm, the basic unit of analysis.

Even though authors are addressing all these levels in their writings Hackett (2000, p 47) does warn that *while the apparent benefits are becoming clearer, knowledge management still needs to be justified in business terms if it is to gain widespread support*. Fortunately technology costs are plummeting and most knowledge management can be leveraged effectively on infrastructure investments that were made in the resent past. Better planning and coordination should assist in getting knowledge management implemented in the right way.

However, coordination and planning are not the only constraints. Grant (1997, p 452) mentioned that the dilemma for any company is that *sustaining a competitive advantage requires barriers to knowledge replication by competitors, but to effectively exploit knowledge requires that companies have to be capable of replicating knowledge internally.* Uncertainty over the route to take, causes a 'wait and see' attitude. His advice on how to reach a state of action is to ensure that employees are mobile and that organizational capability depends more upon the firm's mechanisms of integration than on the extent of employees' specialist knowledge. He is of the opinion that *the greater the span of knowledge being*

integrated and the more sophisticated the integration mechanisms, the more difficult is it for any potential rival to accomplish replication. This opinion is supported. The associated risk, however, is that by concentrating too much on capturing knowledge the development of knowledge is forgotten.

Knowledge management is discussed in more detail below. It was seen as useful to start at the beginning and to provide the background to the establishment of knowledge management, the definitions available, major contributions to the subject area as well as to provide some implementation strategies.

2.4.2.1 Background

Knowledge management does deserve the attention it is receiving because knowledge has become the primary ingredient of what today's economy makes, does, buys and sells. As a result, managing knowledge, sharing it and selling it has become an important economic function of individuals, companies and nations. As was reported before, this is as a result of a basic understanding that the fundamental source of wealth has become knowledge and communication rather than natural resources and physical labour (Stewart, 1997, in Hines, 2000, p 2). There is also a general realisation that, in a fast changing, competitive, global environment, the ability to exploit knowledge is what gives companies their competitive advantage. Therefore, sharing knowledge with customers, potential customers, suppliers, and in some cases competitors is becoming a growing business practice (Bartlett, 1995 in Zickner, 1996, p 22; Hackett, 2000, p 13; Wiig, 1997, p 399).

Knowing that knowledge provides competitive edge and understanding its strategic importance is of course not the same. Joia (2000, p 68) states that the understanding of knowledge as a strategic weapon for a corporation is not recent. He reports that academics, researchers and practitioners have been highlighting the importance of the intangible assets of a corporation for a number of years. For example, Joia claims that in 1945, Frederick Hayek presented research about the use of knowledge in society and in 1962, in a seminal work, Fritz Machlup from Princeton University produced an eight-volume work under the general title *Knowledge: its creation, distribution, and economic significance*. As has Sveiby (2000b), Joia (2000) too noticed that the last 10 to 15 years of the previous millennium brought about a total explosion of documentation about the subject. With regard to the years since 1985, Sveiby (2000b) is of the opinion that the knowledge management literature and research from the last decade should be seen to have gone through at least three phases:

- The first phase was from around 1985 – 1990 when a few, not knowing of each other's work, were experimenting, writing and thinking in isolation. They were taking their inspiration from philosophers such as Wittgenstein and Polanyi and were exploring the value created by leveraging the competence and skills of people and knowledge creation. 'Knowledge Management' and 'Intellectual Capital' were not widely used as concepts.

- During the second phase (1991 – 1997) the IT revolution and the Internet started driving change in organizations. The IT solutions and management processes during this time were about reusing (existing) knowledge and how to avoid re-inventing the wheel. The misconception that knowledge could be 'managed' enthused managers and consultants around the world. The phrases 'knowledge management' and 'intellectual capital' became the highlights of conferences in both Europe and the United States. Both knowledge management and intellectual capital were seen primarily as means to increase efficiency. (Interestingly enough Sveiby (2000a) is also of the opinion that knowledge management became 'hijacked' by the IT vendors and intellectual capital was misconstrued as a way of measuring intangibles and publishing information in annual reports during this phase.)

- The third phase is post 1997. In this phase knowledge creation and innovation were regarded as 'hot' and the issues became much more human again. More and more people have come to realize that efficiency is not enough. Creating environments that enable all people to create knowledge are said to generate the real value for corporations and society. People are beginning to realize that human beings are at the core of value creation and not IT systems.

Sveiby (2000b) is of the opinion that it is because of the convictions of this third phase that efforts to manage knowledge (and intellectual capital) are now pursued with considerable success by many leading organizations. It is certainly evident at South African information professional conferences and discussions that knowledge management, especially, has entered a new phase. From these same discussions it is also clear that there is diversity in the understanding of what knowledge and knowledge management actually is. In an attempt to better understand the terminology, a variety of definitions were found.

2.4.2.2 Definitions

Sveiby (2000a), reports that there are two schools of thought when defining what knowledge is:

- The first group defines knowledge as **a justified true belief**. When somebody creates knowledge, he or she makes sense out of a new situation by holding justified beliefs and committing to them. The emphasis in this definition is on the conscious act of **creating meaning**.
- The second defines knowledge as **a capacity-to-act**, (which may or may not be conscious). The emphasis of the definition is on the **action** element: a capacity-to-act can only be shown in action. Each individual has to re-create his or her own capacity-to-act and reality through experience. Here knowledge is dynamic, personal and distinctly different from data (discrete, unstructured symbols) and information (a medium for explicit communication). Sveiby (2000a) is also of the opinion that since the dynamic properties of knowledge are most important for managers, the notion of individual competence can be used as a fair synonym for a capacity-to-act.

It is especially the second definition that is of importance within the context of this study. As a result, further definitions all support the notion of empowerment and ability to do tasks without supervision. It is the contention that modern management has little time for supervision and ensuring that staff members have created the correct meaning. Each employee should be empowered to make informed, knowledge-enabled decisions when necessary. 'Empowered' should be taken to include the necessary training and infrastructure to do so. In this regard Quintas, Lefrere and Jones's (1997, p 390) statements on knowledge are also of interest. They believe that *knowledge should be seen not as a set of facts or even skills out there which can be discovered, identified and utilized, but that knowledge should be seen as a process, a set of relationships in which power is heavily implicated. Not in the sense of knowledge is power, but in the proposition that power and knowledge are constituted together.* Power is seen here in a very positive sense. It indicates being in control of the situation or, again, being empowered and therefore having the ability to make informed decisions.

Since knowledge is the product that needs to be managed, it is perhaps also useful to briefly look at Grant's (1997, p 451) assumptions concerning the characteristics of knowledge and the circumstances of its creation. He is of the opinion that:

- Knowledge is the overwhelmingly important productive resource in terms of its contribution to value added and its strategic significance.
- Different types of knowledge vary in their transferability. The critical distinction is between 'explicit knowledge' which can be articulated (and hence is transferable at low cost), and 'tacit knowledge' which manifests only in its application and is difficult to transfer. The ease with which knowledge can be transferred also depends upon the capacity of the recipient to aggregate units of knowledge.
- Individuals are the primary agents of knowledge creation and, in the case of tacit knowledge, are the principal repositories of knowledge. If individuals' learning capacity is bounded, knowledge creation requires specialization. However, an increase in depth of knowledge normally requires sacrificing breadth of knowledge.
- Most knowledge is subject to economies of scale and scope. This is especially the case with explicit knowledge, which, once created, can be deployed, in additional applications at low marginal cost.

None of these assumptions could be challenged and therefore the actual act of managing knowledge was investigated further. Wiig's (1997, p 402) description, in a narrow, practical sense, is that knowledge management is a set of distinct and well-defined **approaches** and **processes**. The purpose is to find and manage positive and negative critical knowledge functions in different kinds of operations, identify new products or strategies, augment human resources management, and achieve a number of other, highly targeted objectives. In so doing, knowledge management addresses both managerial 'top-down' and individual 'bottom-up' activities. Based on this definition he claims that knowledge management focuses on eight important operational areas. This requires that knowledge managers:

1. survey, develop, maintain and secure the intellectual and knowledge resources of the enterprise;
2. promote knowledge creation and innovation by everyone;
3. determine the knowledge and expertise required to perform effectively, organize the knowledge, make the requisite knowledge available, 'package' it (in training courses, procedures manuals or knowledge-based systems, for example) and distribute it to the relevant points-of-action;
4. modify and restructure the enterprise to use knowledge most efficiently, take advantage of opportunities to exploit knowledge assets, minimize the value-added knowledge content of products and services;
5. create, govern and monitor future and long term knowledge-based activities and strategies, particularly new knowledge investments such as R&D, strategic alliances, acquisitions and important hiring programs based on identified opportunities, priorities and needs;
6. safeguard proprietary and competitive knowledge and control use of knowledge to ascertain that only the best knowledge is used, that valuable knowledge does not waste away, and that knowledge is not given away to competitors;
7. provide knowledge management capabilities and knowledge architecture so that the enterprise's facilities, procedures, guidelines, standards and practices facilitate and support active knowledge management as part of the organization's practices and culture;
8. measure performance of all knowledge assets and account for them, at least internally, as capitalized assets to be built, exploited, renewed, and otherwise managed as part of fulfilling the organization's mission and objectives.

Demarest (1997, p 380) in effect supports Wiig in stating that knowledge management goals are focused on internal practices, sharing practices and increasing efficiencies. He advises that the following questions are continually asked:

- Does our knowledge work?
- How well does it work relative to other similar knowledge practices?
- How do we break down the prejudices and assumptive barriers?
- How do we create knowledge?
- How do we embody knowledge?
- How do we maintain and enhance knowledge?
- When do we scrap 'old' knowledge in favour of newer knowledge?

He claims that, without asking these questions, it is possible for the firm to lose focus of its real objectives. Demarest (1997, pp 378-379) is of the opinion that *all knowledge management programmes ought to be targeted directly at the firm's income statement: at revenue enhancement, cost reduction, or the management of risk associated with marketplace and financial performance. Ultimately, all knowledge management programmes and problems are local: unique to a particular firm and its knowledge economies. This implies that the only top-level metrics for a knowledge management system that ultimately matter are economic ones: market share, revenue, gross margin, concept-to-cash-flow cycle time, customer satisfaction*

and other commercial success metrics. Other metrics – concerned with the productivity and efficiency of the knowledge management process itself – have value to knowledge workers and knowledge managers, but an optimally efficient, high-volume knowledge system that does not lead to dominating market performances has no ultimate value to the firm. He sees the only reasonable purpose of an organized knowledge management practice in the firm, as *to increase the quality and quantity of marketplace performances: to enable the firm to sell more and sell better, to support more and support better, to create and keep more, better, customers*. Hackett (2000, p 12) confirms this by predicting that, by focusing on innovation and customer knowledge, breakthroughs and future growth within companies can be expected. He recommends that knowledge be seen as *the fuel that provides the energy for corporate innovation, wealth creation and workforce productivity*. Out of context these statements may sound as if uttered by a typical bottom-line driven executive. Looking at them in more detail, it can be seen that they deal with the goals of the organization and that these authors are correct in what they are saying. No knowledge management activity should ever be regarded as successful if it does not support the overall mission and goals of the organization.

In line with Wigg's definition above, authors such as Hackett (2000, p 5) define knowledge management as the art of creating value from an organization's intangible assets. He also sees it as *an integrated, systematic approach to identifying, managing, and sharing an enterprise's entire information asset, including databases, documents, policies, and procedures, as well as previously unarticulated expertise and experience held by individual workers. Fundamentally, it is about making the collective information and experience of an enterprise available to the individual knowledge worker, who is responsible for using it wisely and for replenishing the stock. This ongoing cycle encourages a learning organization, stimulates collaboration, and empowers people to continually enhance the way they perform work* (Hackett, 2000, p 5).

Arora (2002, p 240) summarizes the opinions of other authors by stating that knowledge management has three broad objectives. These are to:

- leverage the organization's knowledge;
- create new knowledge and promoting innovation; and
- increase collaboration and hence enhancing the skills level of employees.

Arora continues by stating that the most common ways to ensure that the stated objectives are reached are to develop a knowledge repository and to nurture communities of practice.

Now that it is more or less clear what the term knowledge management means, attention is paid to those authors who seem to be prolific in their writing about the topic. Although quite a few were identified, it was specifically the research done by Davenport and Prusak (1997) that was seen to make a major contribution towards this study.

2.4.2.3 Major contributions relevant to this study

Davenport and Prusak (1997, p 3-4) confirm that information and knowledge are human creations and we will never be good at managing them unless we give people the primary role, but they see an organization as a 'living organism' thriving within a certain almost ecological environment. They therefore developed an information ecology model where the emphasis is on an organization's entire information environment: its culture, the politics, the behaviour and work processes as well as the technology. Because they attempt to address the organization system as a whole this is very similar to Senge's (1990, p 6) system thinking discipline theory. In brief Davenport and Prusak (1997, pp 34-45) describe the three interactive environments as follows:

1 Information Environment

Within the information environment, the following need to be taken care of:

Information Politics - Here the company's internal political strategy should be re-enforced by the information politics. Personal power politics encourages information hoarding whereas consensus strategy encourages sharing.
Behaviour and culture - sharing and gaining knowledge are too good to be left to chance. It has to be a management objective to do so.
Staff - The human role cannot be automated away. Humans are still the best identifiers, sifters, interpreters and integrators of information.
Strategy – The information strategy revolves around the question: 'What do we want to do with information within this organization?' Just as with any other business strategy, it should be expected that the information strategy is not static but that it changes together with changing needs.
Processes - Process improvement ensures incremental improvements whereas process re-engineering leads to radical innovations. No matter what process is used, both start off with a detailed description of the status quo.
Architecture – This is a guide to the structure and location of information within the organization.

2 Organizational Environment

The organizational environment deals with the:

Business situation - the firm's business strategy, business processes, organizational structure/culture and human resources orientation all influence the information environment.

Technology Investment - The overall IT investment will have a definite effect on both the collection and dissemination aspects of the information environment although an over-emphasis on technology drives out good information.

Physical arrangement- physical proximity increases the frequency of communications within groups.

3 External Environment

This is where the organization needs to attend to the:

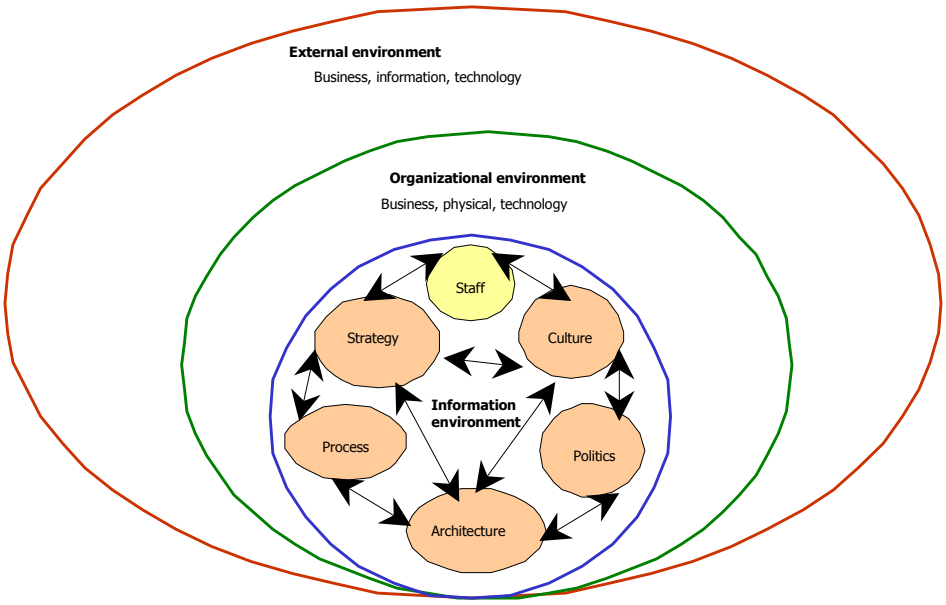
Business Markets – to create the general business conditions within a firm.

Technology Markets - the company needs to know what is available and if that technology could be of real value.

Information Market - this concerns both the buying and selling of information. Most companies can identify the information they need to buy but it is advisable that they also generate income from selling information.

Figure 2.3 below shows that all of the above have to interact to make for a sound information ecology.

Fig 2.3 **The Davenport and Prusak ecology model** (Davenport and Prusak, 1997, p 34)



This ecology model is of importance because it links to the development of intellectual capital, which is discussed in detail in Chapter 3 of this research. In this regard, Davenport and Prusak's external environment could be tied to financial and customer capital while organizational environment, strategy, culture, politics, architecture, processes and strategy should all be regarded as structural capital. The

'staff' section could be equated to human capital. It is of course not the fact that the components are similar that is of importance. Taking cognisance of the interrelationships amongst the various components is.

Taking note of the interrelationships is of crucial importance during the implementation phase of knowledge management. There are, however, other issues to consider. These are discussed in the next section.

2.4.2.4 Implementation strategies

Davenport and Prusak (1997, pp 16-24) are of the opinion that in effect managing knowledge also requires effective information management. In this regard they have identified four modes of information management within organizations:

- Unstructured information management: this is the way information has been dealt with by individuals and librarians for centuries. It is predicted that in future the process of information collection and management will take place on an individual level rather than in a centralized group such as a library or competitive intelligence group.
- Structured information management but on paper: paper-based records and documents have been around as long as anyone can remember. However, even the best-managed paper collection is useless if it does not get used.
- Structured information management making use of computers: primarily this addresses highly structured data involving past financial or operational management within the organization. It usually excludes external market numbers, structured communications inside and outside the firm and text or graphics-based records.
- Intellectual capital or knowledge related information management: here organizations have started to encourage and reward staff for contributing to knowledge bases. Unfortunately, they have noticed that although theory and philosophy are very often in place many companies are still struggling with implementation.

With any one or all of these modes of information management more does not necessarily mean better. A knowledge base containing only repetitive knowledge is a waste of time and effort. Unlike material commodities, in the economics of information, more must mean different or it is worthless. Similarly to Hackett (2000, p 12), the advice on information management, as given by Davenport and Prusak (1997, p 135), is to focus on customer needs and satisfaction. In that way information management becomes more effective and may even be seen as knowledge with commercial value. In support of this statement the words of Demarest (1997, p 375) are worth mentioning *Good commercial knowledge, valuable knowledge is knowledge that works. The goal of commercial knowledge is not truth, but effective performance: not 'what is right' but 'what works' or even 'what works better' where better is defined in competitive and financial contexts.* Obviously ethical values need to be kept in mind but that again is a totally different subject. Ethical values are not what Davenport (1996) regard as major obstacles in getting

knowledge management to work. He is of the opinion that the 10 principles, to effective knowledge management, listed below, need to be attended to prior to implementation or else the actions are doomed to fail.

- Knowledge management is expensive – secure sufficient funds.
- Knowledge management requires hybrid solutions of people and technology – technology on its own will not be sufficient.
- Knowledge management is highly political – take care of the organizational politics or the system will never get going.
- Knowledge management requires knowledge managers – appoint appropriate staff.
- Knowledge management benefits more from maps than from models, from markets than from hierarchies – stop talking and do something to show results.
- Sharing and using knowledge are often unnatural acts – the behaviour therefore needs to be encouraged.
- Knowledge management means you have to improve the work process.
- Access to knowledge is only the beginning of knowledge management.
- Knowledge management never ends.
- Knowledge management requires a knowledge contract**.**

From these principles it is clear that senior management needs to be serious about the company's knowledge management activities or any activities will eventually boil down to a waste of money. From detail provided by Smith (1998, p 8), wasted money in terms of useless knowledge management activities could accumulate to large sums. He reported, for example, that the knowledge management bill for leading consulting companies such as Ernst and Young and McKinsey and Co, is on average between six and ten percent of revenue. When a company spends that much it had better show return on the investment!

Once the principles are in place, Hackett (2000, p 22-23) is of the opinion that knowledge can be 'managed' in two ways, namely: emergent, self-organizing, bottom-up model; or centrally designed commonly shared architecture, top-down model. Either the top-down or bottom-up implementation method may work and sustain positive results if it is aligned with organizational culture and local performance drivers. He warns that if there is a mismatch, the outcome may be more detrimental than good. Theory in and of itself does little good. Knowledge management suggests a dilemma that all managers have to grapple with: the organizational tension between process, the way matters are formally organized, and practice, the way things actually get done. For a company to make the most of its knowledge, to 'know what it knows', it needs to take practice, practitioners, and the communities that practitioners form seriously. First, managers need to learn what local knowledge exists. Then if the knowledge looks valuable, they need to put it into wider circulation (Brown and Duguid, 2000, p 76). Or, as Hackett (2000, p 17) puts it *For knowledge to have that effect it does mean that the knowledge needs to be created or identified, and that it then needs to flow among workers, workgroups, and business groups, and across the entire enterprise.* This in itself requires that the knowledge management system(s) have to make provision for collection processes,

quality standards and a maintenance process (for both the structures as well as content within the structures).

It is said that the test of a knowledge management system is ultimately whether it is a by-product of the firm's operations, or an explicit objective of the operations (Demarest, 1997, p 377). To confirm this Hackett (2000, p 22) is of the opinion that knowledge in an organization is analogous to oxygen in the human body: critical to sustaining life, but not necessarily a subject for explicit management, unless the natural organic systems are failing. He states that *the sign of an effective knowledge management system is a process and infrastructure aimed at supporting the creation, harvest, assimilation and leverage of knowledge*. Smith (1998, p 9) warns that such a process and infrastructure is people-intensive. Not in the sense of employing new members of staff but in the sense that all have responsibility towards making the system work.

A working system always, according to Davenport and Prusak (1997, p 85 and 182), occurs through a combination of technological and behaviour change. They warn that an organization's general approach to human resources can determine whether knowledge management initiatives succeed or fail. In this regard Brown and Duguid's (2000, p 74) opinion is shared. They feel that successful companies are not those that work around their problems; they are those that turn their problems to their own advantage.

To create robust bodies of knowledge that work for the company, methods and practices, ways of working with knowledge have to be developed. This means that the construction, embodiment, dissemination, use and ultimately maintenance of the knowledge need to be spelt out. Demarest (1997, p 381) sees successful knowledge management activities being influenced by three interactive 'role players'. These are:

1 **Infrastructure**: that which facilitates the day-to-day process of knowledge-building and which has to make provision for a:

- **Cultural infrastructure** - the knowledge management rewards embodiment and dissemination and incessant knowledge creation.
- **Operational infrastructure** - with focus on the individual knowledge worker and her team, and all have to be tied directly to the knowledge producing capacity of that team.
- **Technical infrastructure** - in the modern firm, knowledge travels through information technology.

2 **People**: those ultimately responsible for knowledge creation and building. Here the guiding principles should be that:

- senior management set the tone and show support;
- day-to-day reinforcement and coaching come from mid-level;
- learning and sharing are seen as equally important;
- trust is essential. It should be built to overcome the effects of 'not

invented here' and 'knowledge is power'. Managers should trust employees and employees on the other hand should be able to trust that sharing enhances employment status and does not undermine the business's need for them;
- human interaction cannot be replaced, especially for the sake of transferring tacit knowledge;
- rewards/recognition are carefully evaluated before implementation, so that unexpected and unintended consequences are avoided.

3 **Processes**: that which provides the methods of capturing knowledge. Here:

- key knowledge management processes must be defined which includes the capturing, sharing, and application of knowledge, the ways in which to develop new knowledge and protection of knowledge assets;
- process design includes content, scope and speed, intended use and expected outputs.

Again these interacting 'role players' can be linked to Davenport and Prusak's ecology model and ultimately to infrastructure and human capital, as discussed within the section on intellectual capital development. The interaction amongst a variety of elements is a continuing theme, which is perhaps why Hackett (2000, p 21) warns of the importance to remember that connectivity is more effective than capturing. Therefore facilitating the connections between people is more successful than trying to capture and sort knowledge for all potential accesses. Enabling/expecting people to learn, share, refine, and apply knowledge is the key element and therefore multiple channels of knowledge transfer must be supported. In line with Hackett's opinion Quintas, Lefrere and Jones (1997, p 387) suggest that implementation should make provision for the following knowledge management activities:

- disclosure of knowledge so that all members of an organization can use that knowledge in the context of their organizational roles;
- ensuring that knowledge is available at the precise location where it is most crucial for decision making;
- ensuring that knowledge is available when it is needed for a business process;
- supporting the acquisition of knowledge from external sources;
- ensuring that new knowledge is distributed;
- ensuring that everybody in the organization knows where knowledge is available.

The list of activities mentioned above appear to be very reactive but would ensure that existing and emerging knowledge needs are met. It is doubtful that these activities would pro-actively allow for the identification and exploitation of existing and acquired knowledge assets to develop new opportunities. It is therefore little wonder that Hackett (2000, p 57) came to the conclusion that, theoretically, knowledge management is a great accelerator of innovation and creativity but, in practice, most knowledge management projects are still conservative and focused on efficiencies. De Gooijer (2000, p 308) provides an explanation for this tendency. She remarks that there are a number of levels of skill in adopting knowledge

management and it is only during the most advanced of these stages that an individual can see and take advantage of new business opportunities. The stages of development as identified by De Gooijer are:

- being aware of but not using knowledge management tools or practices;
- seeking information about knowledge management;
- personal experimentation with knowledge management tools and practices;
- personal implementation of knowledge management practices;
- engaged with impact and consequences of knowledge management behaviour;
- actively collaborates in all aspects of work; and
- refocusing knowledge management skills on new business opportunities.

Once the experimentation with these stages of knowledge management starts and positive results become visible, there is of course always the temptation to knowledge manage everything. However, companies that utilize their knowledge effectively focus their attention. In other words, they do not try to knowledge-enable everything the organization does. They rather identify which payback processes can yield significant business value (Smith, 1998, p 9). Examples of companies where knowledge management was implemented successfully are provided below.

2.4.2.5 Examples of implementation success stories and lessons to learn

A variety of publicly available case studies compete to prove that knowledge management has saved on costs and improved efficiency. Management consultancy firms were in all probability the first to implement the theory and report on their success in practice. In South Africa Ernst and Young is often used as an example of excellence. McLean (2002) recently shared the detail of their success. At the same occasion Schoemaker (2002) gave details of the strategy at AngloGold while Kuhn (2002) used Eskom and the Stellenbosch Farm Wineries as examples of knowledge 'wise' enterprises and Hiscock (2002) showed that Sasol is also achieving success.

Knowledge management is not always an obvious action that is taking place. Viedge (1997, in Wiig, et al., 1997, p 45) identified a variety of companies where knowledge management is so ingrained in the systems that neither they nor their customers are consciously aware that they are managing their knowledge. They only experience efficiency! These companies are, for example, Microsoft, Intel, 3M, McDonalds and Disney. Similarly, Cook (1997, in Wiig, et al., 1997, p 60) is of the opinion that Bell Laboratories are achieving excellent results due to the knowledge management activities of specifically their professional engineers.

As a last set of examples worth noting - Hackett (2000, p 5) has established that knowledge and learning initiatives at leading firms such as BP Amoco and Ford Motor Company have resulted in gains of more than $600 million each. This does not mean that knowledge management is a magical cure for all ills. There are several lessons to learn from before venturing into the realms of knowledge management.

Many of the lessons to learn are quite obvious when looking at the implementation strategies.

The first lesson is from Smith (1998, p 7). He advises that, before an enterprise embarks on a knowledge management mission, it should first examine whether it exhibits one or more of those elements that predispose it to intensive knowledge management. Elements that typify the need for knowledge management are:

- geographic dispersion;
- rapid growth and high level of turbulence in the work force;
- culture of autonomy;
- strategic mindset;
- highly competitive industry; and
- being aware that your 'product' is largely composed of knowledge.

If these elements are not yet in place it is perhaps not worth pursuing knowledge management at that specific stage.

Secondly Davenport and Prusak (1997, p 5) warn not to expect significant changes in the environment if only focused short term projects are used to try and make an impact on the environment. This implies that **how** people create, distribute, understand and use information is put at the centre of longer-term projects and that it is understood that:

- knowledge is not easily stored on computers because it is not data;
- the more complex the information model, the less useful it will be;
- information can take on many meanings in an organization; and
- technology is only one component of the information environment and is often not the right way to create change.

From the work of Davenport and Prusak (1997, pp 65-66, 107, 169, 174, 191-192, 220-226), it was possible to also identify a large number of lessons. The following items serves as general implementation advice:

- Senior management members have to buy into the idea of managing knowledge.
- The company has to have a clear strategy and consensus about what will make the business successful. Managers as well as senior staff should be involved in setting the strategy as well as to identify selection criteria and categories for the knowledge that needs to be managed.
- A senior manager should be responsible for implementing knowledge management activities.
- Information should critically increase the value of the products and services the company provides or else it serves no purpose to collect that information.
- There should already be efforts to collect good quality information about the operation and performance of cross-functional business processes.
- The company should be able to respond to changes in organizational structure and culture.

- The knowledge and capabilities of employees have to be understood. Employees should also be evaluated and rewarded for their information behaviour.
- Training should be provided to encourage the desired information behaviour.
- The nature and role of IT have to be understood. Needs should be clearly identified before new technology, to specifically address those needs, is purchased. Senior managers also need to understand how technology can assist or retard processes.
- It has to be easy for employees to communicate with each other.
- All should know whom the knowledge is being managed for. The audience has to be clearly defined.
- All available bits and pieces of information have to be reviewed prior to making decisions as to what to collect and what not. There should be a plan and an approach to identify and collect useful information irrespective of the format in which the information was captured.
- It helps to keep track of all sources of information, especially when there is a need to go back to the source for more information.
- Employees who need to share information should ideally be located in the same office in the same physical space.

Compiling an exhaustive list of lessons or items that need consideration can result in a never-ending exercise. The items above were seen as the most important and serve only as a point of departure. A brief summary of what knowledge management involves, is provided below.

2.4.2.6 Knowledge management in brief

As was seen the overall purpose of knowledge management is to maximize the enterprise's knowledge-related effectiveness and returns from its knowledge assets and to renew them constantly. This implies that tacit knowledge must be transferred to explicit, shared knowledge if it is to be of general and lasting value. Taking all of what was reported into consideration, one can only agree with De Gooijer (2000, p 307) when she declares that *knowledge management is a radical innovation or change to an organization's operations, and thus is to be regarded as an intervention on the organization's culture*.

It is very clear that knowledge management is not something that can be practiced in an exclusive centralized department of an organization. Before the benefits of knowledge management can be reaped, each and every possible contributor to the knowledge store needs to be enthused by the idea and the environment should be supportive as well as enticing. Most importantly, similarly to what Senge advised in terms of looking at the learning organization holistically, the bigger picture of interconnectedness as well as cause and consequence needs to be understood by all decision makers. It is clear that the previously well-established hierarchical structures of command do not necessarily lead to really useful bodies of knowledge. Therefore each and every contributor needs to be empowered and motivated for the whole process/system to be implemented successfully. To quote Lank (1997, p 412) *By focusing on the human factor and ensuring that your knowledge management*

processes give more than they take from employees, you may find yourself on a virtuous spiral to a step change in performance.

2.4.3 Intellectual capital management

According to Bontis (1998, p 64), the ascendancy of intellectual capital is that it has developed as a result of powerful forces such as global competition. As is the case with knowledge management, the publications relating to intellectual capital management came to the fore during 1997. One of the first indications of the dawn of a new management philosophy is the fact that *Long Range Planning* (V30 (3), June 1997), known for its strategic focus, devoted an entire issue to intellectual capital management. In 1999 the Franklin Pierce Law Centre reported that in one year, more than 600 titles relating to only intellectual property were added to its holdings (http://www.ipmall.fplc.edu/ip-library/ 1999ipl_acq.htm). During 2000 MCB University Press launched a new journal entitled *Journal of Intellectual Capital*. From this it is clear that there definitely is no shortage of intellectuals paying attention to and expressing their contributions to the topic. In fact the topic is receiving so much attention at present that some governments are in all probability already looking into the ways and means to tax intellectual and intangible assets!

2.4.3.1 Background

To illustrate intellectual capital, Roos and Roos (1997, p 413-414) make the reader aware that if the top 50 programmers suddenly left Microsoft, the share price of the company would be likely to drop dramatically. While the company may just have gone into 'intellectual bankruptcy', the short term profits may very well rise since costs will have been lowered! Edvinsson (1997, p 366) provides a very simple metaphor to explain the intellectual/financial capital distribution within the company. He equates the company to a fruit-bearing tree. He is of the opinion that the long term sustainability of an organization requires that focus be placed on nurturing the roots (intellectual capital) rather than on harvesting the fruit (financial capital). In the final analysis it shows that intellectual capital becomes at least as important as financial capital in providing truly sustainable earnings.

Edvinsson is seen as probably the most eminent intellectual capital practitioner in the field. He (1997, p 372) stated that intellectual capital management is more than just knowledge management. *Intellectual capital management is leveraging human capital and structural capital together. It is multiplying the interaction between human capital and structural capital. Intellectual capital value emerges out of these connections and relationships*. A variety of other definitions for intellectual capital were also traced. Some of these are reflected in the next section.

2.4.3.2 Definitions and concepts

It appears that there are three schools of thought regarding the definition of intellectual capital. Authors such as Brooking (1997, p 364), Edvinsson (1997, p 369), Stewart (1997, p 75), and Sveiby (1998c) see it as both the tangible and the intangible aspects of intellectual labour. Authors such as Bontis (1998), Jordan and Jones (1997) and Roos and Roos (1997) acknowledge the tangible but concentrate on the intangible (or human capital aspects). Lastly, there are also those like Rivette and Kline (2000a and b) who are only interested in the tangible aspects of intellectual capital, namely financial gain from intellectual property. For the purpose of this research, the tangible and intangible are considered to be inseparable components of intellectual capital.

In terms of the actual terminology used, there are also three variations. Sveiby (1998c) created the following table to compare the conceptual frameworks:

Table 2.1: Conceptual frameworks for intangible assets (Sveiby, 1998c)

	Contributing authors		
	Sveiby	Kaplan and Norton	Edvinsson
Concepts	Internal structure	Internal process perspective	Organizational or structural capital
	External structure	Customer perspective	Customer capital
	Competence of personnel	Learning and growth perspective	Human capital

For the purpose of this research a simplified definition of intellectual capital is as follows:

Human capital (including innovation capital) +
Structural capital +
Customer capital =
Intellectual capital

A variety of authors provide the reader with more complex versions of what should be regarded as intellectual capital. Bontis (1998, p 65) reported that John Kenneth Galbraith first published the term intellectual capital in 1969. According to him Galbraith believed that intellectual capital meant more than just 'intellect as pure intellect' but rather incorporated a degree of 'intellectual action'. Stewart (1997, p xv) reported that he coined the phrase intellectual capital as a result of a discussion between himself and Ralph Stayer, the chief executive officer of a company named Johnsonville Foods. Whatever the origin of the concept, most authors (Bontis, 1998, p 65; Groth, 1994, p 20; Mullen and Willigan, 2000; Robinson and Kleiner, 1996, p 36; Roos and Roos, 1997, p 413) now use the term intellectual capital to enable

them to verbally equate the intangible component of a company's resources or assets to that of its other assets and resources - notably then those assets that could be reflected on the company's balance sheet. Financial capital represents the company's book value and consists of the value of its financial and physical assets. Everything else could be defined as a company's intellectual capital. Lastly, however, one needs to pay attention to the warning that, although intellectual capital consists of assets created through intellectual activities and although the contribution of value from mind labour has increased relative to the contribution of physical labour, physical labour still translates ideas, discoveries and developments into reality (Groth, 1994, p 20)

Although Edvinsson is seen as the best-known practitioner, Thomas A Stewart could be regarded as the father of the present understanding of intellectual capital. He most probably has the right to say that *intellectual capital has been considered by many, defined by some, understood by a select few, and formally valued by practically no one* (Stewart, 1997, p 221). Edvinsson (1997, p 369) also quotes Stewart as having said that *intellectual capital is something you cannot touch, but it still makes you rich*. While Stewart himself defines intellectual capital as the *sum of everything everybody in a company knows that gives it a competitive edge.* It is *intellectual material – knowledge, information, intellectual property, and experience – that can be put to use to create wealth* (Stewart, 1997, p. ix-x).

Brooking (1997, p 364) is seen to support Stewart with her definition *Intellectual Capital is defined as the difference between the book value of the company and the amount of money someone is prepared to pay for it. Intellectual Capital represents intangible assets that frequently do not appear on the balance sheet*. Quinn (1996, in Zickner, 1996, pp 11-12 and 17) reiterates that very often intellectual capital is only seen as 'tangible attributes such as formal qualifications, skills and specific competencies. Less tangible items such as motivation, ideas and imagination are regarded as less important. His opinion is that professional intellectual capital, in increasing order of priority, should be seen as:

- cognitive knowledge (know what);
- advanced skills (know how);
- systems understanding (know why); and
- self motivated creativity (care why).

The first three of these usually exist in the systems, databases and operating technologies of the company while the last is embedded in the organization's culture.

Zickner (1996, pp 74-76) through her research established the prioritisation of intellectual capital elements in South African service organizations (mainly banking and financial companies). She followed an approach where human capital was equated to intellectual capital. When Quinn's categorization (as reported above) was added to the list it was interesting to read. The identified intellectual capital elements were the following:

	Zickner	Quinn
1	Formal qualifications	know what
2	Skills	know how
3	Specific competencies	know how
4	Company related knowledge	know what
5	Talent	know how
6	Motivation	care why
7	Commitment	know why
8	General knowledge	know what
9	Thoughts and ideas	know why
10	Intuition and imagination	know how

From this exercise it became more evident that, although all cognitive skills were identified to be priority areas, they are still the two lower order skills (what and how) that are most prominent. Zickner's (1996, pp 74-76) research confirmed that although organizations understand and realize that higher level, intangible skills allow a person and the organization to aggressively adapt to rapid changing environments, they still focus heavily on the more basic and systems skills and perhaps to some extent neglect creative skills. This could be because some may see intellectual capital management as a 'flavour of the month' management practice or a fad that may soon go away.

Wiig (1997, p 399) warns that both knowledge and intellectual capital management are far from the narrow management initiatives that may be considered fads or flavour of the month. They are fundamentally different from fads in both objectives and scopes. According to Wiig, both knowledge management and intellectual capital management *are broad, multi-dimensional, and cover most aspects of the enterprise's activities. In contrast, the fads have gained popularity by focusing on a limited scope to simplify the problem setting.* He reiterates that k*nowledge; intellectual assets and capital must be managed deliberately, systematically and with expertise to survive*. Bontis (1998, p 63) too reported that intellectual capital management is not receiving the attention it needs, even though management experts such as Drucker, Nonaka, Quinn, Toffler, Reich, Takeuchi, Von Krogh, and Young have all been warning that the management of knowledge-based intellect will be the most critical skill to sustain the competitive advantage of organizations wanting to flourish within the knowledge economy. Similarly Lank (1997, p 412) is of the opinion that it is recommendable that companies are taking intellectual capital and knowledge management so seriously that they are appointing Chief Knowledge Officers, Heads of Intellectual Capital, Directors of Knowledge Development and Knowledge Managers. However, she questions the formal structure or hierarchy. She feels that it goes against what the harnessing of knowledge and intellectual capital is all about. Accordingly, she suggests that it should be a requirement of each and every executive, and in fact every member of staff, to capture knowledge. She explains that ICL has taken the route of employing 'knowledge engineers' to create and take care of explicit knowledge as and when it is required so that front line staff would be able to access the knowledge if the need should arise again. For the

purpose of this study, Lank's opinion is shared. Each and every member of staff should share in the responsibility of building the organization's knowledge assets.

The measurement of and reporting on intellectual capital assets is discussed in detail in Chapter 4 of this study. It is sufficient to say that intellectual capital's value, both real and potential, is greater than that of the financial capital. Nevertheless, according to Wiig (1997, p 401) the management emphasis and attention given to intellectual capital management is usually far less that what the more tangible assets are receiving. It appears that, traditionally, the only way in which a company is able to tangibly prove its success is through an instrument known as the 'balance sheet'. What is not reflected on the balance sheet does not count. Edvinsson (1997, p 367), who was appointed as Intellectual Capital Manager at the Swedish company Skandia during the second half of the 1990's, is of the opinion that in a society where a major proportion of a company's investment stream goes into intangibles, there is a need for another mapping system. At Skandia they identified it as 'the need for a future accounting'. He continued to say that the idea is not to distort the financial information, but rather to supplement it.

To illustrate his argument Edvinsson (1997, p 366) used the following example. *In the industrial society, investment used to go into plant, equipment and capital tools. Today, a major proportion of the investment goes into knowledge upgrading or competence development leading to human capital. Another major investment stream goes into the development of information technologies leading to value added networks, global area networks. This is something that is invisible on the corporate balance sheet.* Stewart (1997, p 60) confirms this with his American Airlines example. The airline lists all its jetliners as assets yet its reservation information system, which is more profitable, is intangible and therefore not listed as an asset.

Fortunately it does appear that, since 1998 more and more organizations have recognized the importance of correctly identifying its intellectual capital. All organizations that pursue intellectual capital management emphasize that intellectual capital defines the **future** capabilities of the enterprise. The goal of managing and building knowledge assets is to improve the company's **value creation** capability through the more effective use of knowledge. Taking this a step further, the goal of intellectual capital is to improve the company's value generating capabilities through identifying, capturing, leveraging and recycling intellectual capital. This includes both **value creation and value extraction**. To explain this, Bontis (1998, p 67) indicates that when a manager receives a printout from a computer detailing the previous week's cost per transaction figures, he or she is reading information. The implications derived from the trends or underlying issues from the data are what is referred to as knowledge. Intellectual capital is the pursuit of the effective use of knowledge as opposed to effectively using information. With this in mind, it is possible to see that the management of intellectual capital is a process that can be facilitated, but which is not easily controlled. Managers therefore need to understand how to deploy their intellectual capital more productively while the company employs the 'human asset'. This would include putting in place structures

and procedures to capture and make available intellectual property that came about due to the deployment of its intellectual capital.

2.4.3.3 Implementation strategies

The development of knowledge/intellectual capital assets is discussed in depth in Chapter 3 of this study. For the purpose and within the context of this research, only human capital (including innovation capital) development, structural capital developments as well as customer capital development were addressed. Briefly it can be noted however, that when companies are unsure as to where and how to start building their knowledge assets, it is perhaps best to learn from the experience gained by those who implemented knowledge management and organizational learning systems. They started with small projects in areas where there was some understanding of, and enthusiasm for, putting knowledge into use. Once results were achieved they built on the positive experiences. Hackett (2000, p 19) remarked that having early, visible results served two purposes:

- it encouraged others in an organization to learn how knowledge management affects their part of the business; and
- it showed sceptical managers that there is value in new ways to create and share knowledge.

Difficult as it may be, Edvinsson (1997, p 372) is of the opinion that it is possible to know that one is pursuing the right goals in creating valuable knowledge assets when:

- a network of relevant connections has been establish and is growing rapidly;
- staff members are making use of collective effort;
- results are achieved from match-making and the exchange of ideas among people;
- the tension between internal and external worlds is managed effectively; and
- there is balance between words and numbers, between differences and similarities, and between the development of intellectual capital cultivation and cost rationalization.

Once a 'pool' of knowledge assets has been established, it is of little use if it does not contribute to the organization's development. The utilization of intellectual capital assets should provide the impetus for development and growth within the organization. The most important utilization of knowledge assets most probably relates to the transfer of competence between people within an organization. It is also to look at the environment that could foster the accelerated growth of competence. From the literature consulted it appears that, although it can be developed, intellectual capital cannot necessarily be 'taught' through education and training. Bontis (1998, p 65) as well as Jordan and Jones (1997, pp 392-393) go as far as to say that the most precious knowledge within an organization often cannot be passed on. The best one could do is to create an environment in which intellectual capital can prosper: a place, or space, where one can feel vibrancy – a fun place where work and a sense of personal accomplishment and success for all

are integrated. The challenge was to find examples of companies where such a knowledge asset creation environment was already flourishing. Only the most obvious of these are mentioned in the next section.

2.4.3.4 Examples of companies where intellectual capital management flourishes

Two examples of companies known for their intellectual capital value are competitors: Microsoft, the world's largest computer software firm, which changed hands at an average price of $70 per share during fiscal 1995 at a time when their so-called book value was just $7 per share; and Netscape, a company with negligible profits that ended its first day of trading with a value of $2 billion – a value based entirely on intangible assets (Bontis, 1998, p 64).

Another popular example of a knowledge-intensive organization that is internationally known for its products is Nike. However, as Bontis (1998, p 64) rightly remarks, *Nike is a shoemaker that makes no shoes. Its work is research and development, design, marketing and distribution. Almost all its activities are knowledge-based.*

The consulting industry provides the purest examples of intellectual capital valuation. McKinsey, one of the industry's leaders, does not employ traditional marketing methods; it sells by having clients come knocking to purchase the best analytical knowledge available (Bontis, 1998, pp 64-65).

Robinson and Kleiner (1996, p 38) use Royal Dutch Shell as an example of a company that has instilled mental model re-evaluation as a learning tool. They claim that because Shell was prepared to decentralize control, use the management-by-consensus technique and were ready to re-evaluate mental models, adaptation was made easier. As a result of using their learning and knowledge, Shell was therefore better able to respond to the 1973 oil embargo.

It does appear that large successful, international corporations such as Xerox are able to afford running the risk of experimenting with innovative management theory. This is most probably due to the fact that large companies, which no longer have to battle to survive, can afford to experiment. Consultants, on the other hand, prefer to try out new ideas on the large corporations so they could be used as case studies. In this way, large companies are constantly exposed to new ideas and yet their risk is minimal. In contrast, start-up or small companies are more bottom-line driven. Their risk for failure is bigger and as a result of the bottom line/risk combination they are set up for failure from the start. Grant (1997, p 454) confirms this. He states that, while business corporations are striving to adjust their strategies, structures and management systems to accommodate to the new realities of the knowledge-based economy and to the challenges of managing knowledge-workers, academics are exploring new perspectives on the theory of the firm implied by the characteristics of knowledge and its role in production. This challenge calls for a closer collaboration between academics and practitioners than has typically been the case in the development of management principles. There are signs that such partnerships are emerging. Management consulting companies such as McKinsey

and Company, Ernst and Young and Andersen Consulting; corporations such as Xerox with its Palo Alto Research Center; and university-affiliated units such as Senge's Center for Organizational Learning at the Massachusetts Institute for Technology (MIT) are advancing the development of knowledge-based management through linkages between practitioners and academics.

In contrast, Zickner (1996, pp 79-89) found during her research that in South Africa it appears that medium sized organizations (100-1 000 employees) seem to pay more attention to the acquisition, development and performance measurement of intellectual capital than small (less than 100 employees) or large (more than 1000 employees) organizations. She saw the reasons for this being that small organizations usually run in 'survival mode' and therefore are bottom-line focused rather than on developing employees. In contrast, large organizations tend to be more bureaucratic and formalized and therefore management loses focus of 'softer' issues such as human capital development. This needs to be investigated further as it could be a typically South African phenomenon. If not it could be an indication of the ideal size of the future organization.

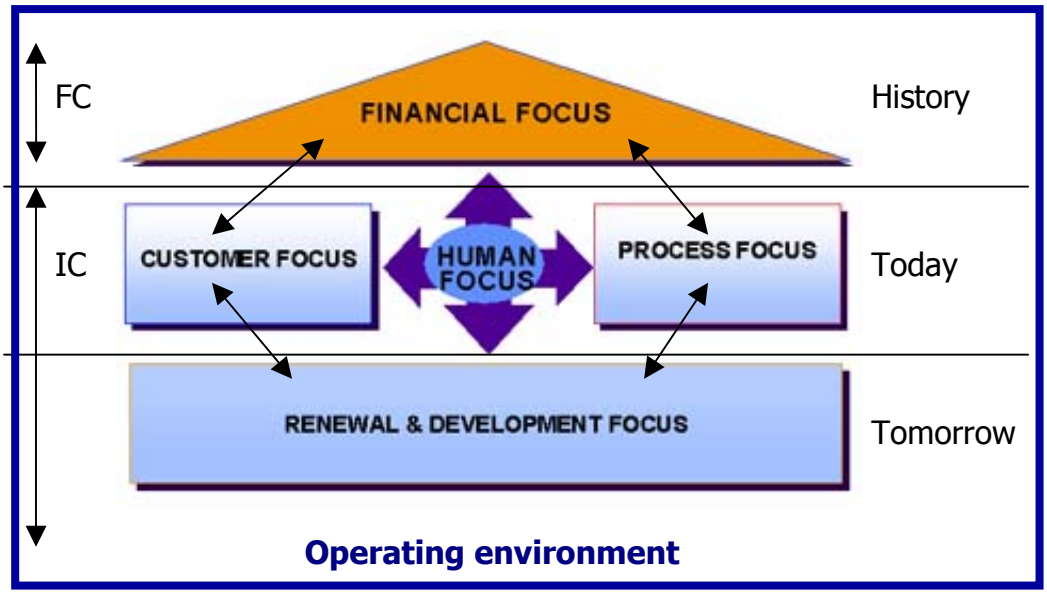
Moving back to international organizations, large companies such as Dow Chemical, Andersen Consulting, Polaroid and Skandia are developing corporate-wide systems to track, access, exploit and create organizational knowledge, typically under the leadership of a director or vice-president of 'knowledge' or 'intellectual capital' (Grant, 1997, p 451). Because most of the intellectual-capital-authors repeatedly refer back to the Skandia model, it was identified as the foundation of the current thinking on intellectual capital management. Skandia is therefore discussed in detail below.

Skandia

In 1991 the Swedish company Skandia AFS formally established an Intellectual Capital function headed by a Director of Intellectual Capital – the first ever in the world (Edvinsson, 1997, p 366). This was because Skandia realized that human capital could not be owned, it could only be rented but that the structural capital could, from a shareholder's point of view, be owned and traded. By 1995, Skandia – the largest insurance and financial services company in Scandinavia – released its intellectual capital report under the heading *Visualising Intellectual Capital*, based on its navigator framework (Edvinsson, 1997, 370). Subsequently other companies, such as Dow Chemical, Canadian Imperial Bank of Commerce, Posco etc., to name but a few, entered this new era (Joia, 2000, p 69).

When Skandia first realised it needed a new management model, it created what is known as the Skandia navigator (see Figure 2.4 on the next page).

Fig 2.4: The Skandia navigator (Edvinsson, 1997, p 371)



From the navigator the Skandia value scheme (see Figure 2.5) was developed (Edvinson, 1997, p 369). Authors such as Bontis, et al., (1999, pp 397-400), Sveiby (1998c) and Wiig (1997 p 401) then used these models to conceptualise intellectual capital.

In all probability the most important value of the navigator lies in the interaction amongst and the interconnectedness of the various components. From the model it is clear that the intention was for management to focus on the present, past and future of the company. Bottom-line driven management models of course concentrate only on financial capital and therefore the 'past' or history of the company. Realizing that intellectual capital could be used as leverage for sustainable financial growth as well as for renewal and development of the organization, the key task of Skandia leadership, at the time when they set out to change the system, was to transform human capital into structural capital. They, according to Edvinsson (1997, p368), adopted the following as their mission:

- to identify and to enhance the visibility and measurability of intangible and soft assets;
- to capture and support packaging and accessibility by knowledge transparency and knowledge technologies;
- to cultivate and channel intellectual capital through professional development, training and IT networking;
- to capitalize and leverage by adding value through faster recycling of knowledge and increased commercialised transfer of skills and applied experience.

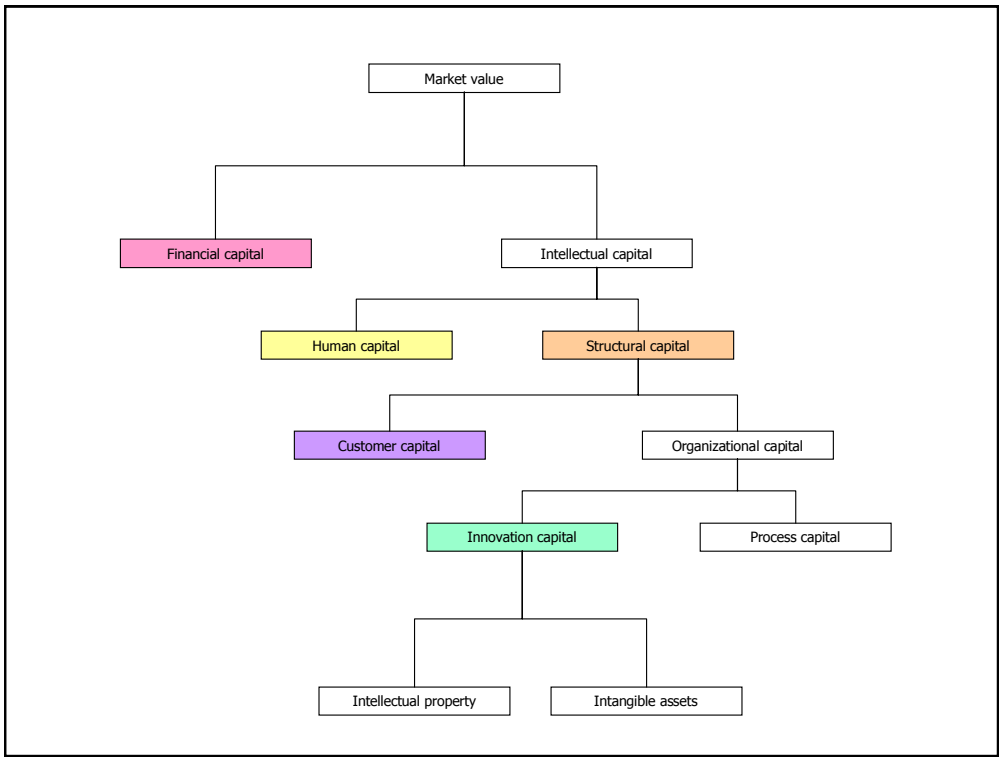
With the Skandia navigator as the 'roadmap', Skandia developed a model through which the different areas that comprise intellectual capital, were put within the same

framework as financial capital. The non-traditional capitals were identified as being the following:

- human capital, consisting of the competence and capabilities of the employees;
- structural capital, consisting of the results of intellectual activities in data and knowledge bases, documents, models and drawings;
- customer capital, consisting of the value of the enterprise's relationships with its customers;
- organizational capital, consisting of embedded knowledge assets in the process and innovation areas;
- process capital, consisting of the enterprise's value creating processes such as its organizational structure, management practices, systems and procedures, infrastructure computer systems and the like;
- innovation capital, consisting of both explicit knowledge and hard-to-identify intellectual assets such as an innovative culture;
- intellectual property, consisting of documented and captured knowledge such as innovations, operational practices, patents, technology, educational programme corporate knowledge bases, and designs and specifications of products and services;
- intangible assets, consisting of the value of positive organizational culture and community image.

According to Kaes (1999, p 22), the Skandia model is based on work that was done earlier by Hubert Saint-Onge and Karl Erik Sveiby. The difference is that Edvinsson further subdivided structural capital into a variety of other entities, as can be seen in the Figure below.

Fig 2.5: The Skandia value scheme (Edvinsson, 1997, p 369)



Within this research only financial, human, structural and customer capital are discussed in detail. Innovation capital is addressed to a limited extent.

However, it would have been relatively easy if it were possible to just copycat Skandia's model. Before adopting this model, it is necessary to understand that:

1. Soft assets or knowledge (intangibles) come in many shapes and sizes. They are stored in databases, printed on paper, integrated into enterprise policies and stored in an employee's memory. Manchester (2000) tells us that employees know instinctively that their knowledge is valuable. He sees it as a given that systems that allow employees to share this valuable asset of theirs with each other are necessary in today's economy. Yet, he warns that there is constant mental conflict because it is also known that, once knowledge is explicit, there is a risk of another employee taking it with him when he joins a rival company. Even worse, however, is that should one be torn between creating a positive innovative environment and a fear of losing valuable explicit outputs a state of inertia is created.
2. Finding information was always relatively easy because it was part of a standard procedure. Today technological information exists not only in a printed form, such as books, journals, documents, reports, directories, patent documents, standards, specifications and catalogues, but also in non-printed form such as audio-visual and machine-readable material, as well as in organizational and individual expertise transferred by the interaction of people attending meetings, seminars and training. It may also be embodied in products and services. On top of that, potentially useful technological information may be found in virtually all countries irrespective of their present level of technological development (WIPO, 1997, p 94). Turning all of that into a knowledge product or service is somewhat more difficult than just merely collecting and storing information generated by staff members.
3. There is no doubt that information is the foundation on which knowledge rests. Knowledge is a prerequisite for innovation and innovation is what keeps a company relevant.

Therefore, although it is possible to utilize the Skandia framework, each institution needs to develop and populate its own model. With the assurance provided by Kaes (1999, p 29) that all experts in the field of intellectual capital commonly divide intellectual capital into human, structural and customer capital, the challenge was to put these capitals within the framework developed by Kaplan and Norton (see Figure 4.5 on page 4.31). A small deviation was to include innovation capital as a sub-set of *human capital* and not as a capital on its own. More detail pertaining to this is provided in section 3.2.1 on page 3.4 of this report.

2.4.3.5 Intellectual capital management in brief

Edvinsson is perhaps the best-known practitioner and Skandia is seen as a role model for intellectual capital management, but Thomas A Stewart could be regarded as the father of the present understanding of intellectual capital. Intellectual capital is defined as the difference between the book value of the company and the amount

of money someone is prepared to pay for it; intellectual capital's value, both real and potential, is therefore greater than that of the financial capital. Put differently: intellectual capital represents intangible assets that usually do not appear on the balance sheet. It would however be a mistake to believe that intellectual capital management only has value for those companies where shareholders are the main stakeholders. The knowledge economy impacts on all individuals with no regard for the standing and purpose of either the individual or the company. In this section it was established that intellectual capital can be sub-divided into several other 'capitals' (that are also known by a variety of terms), but in effect the main components are human capital, structural capital and customer capital. It was also confirmed that financial capital is an integral and very important capital that cannot be ignored, but that financial gain should be seen as proof that the other three capitals are sound and well rather than simply focusing on the balance sheet as only indicator of success.

2.4.4 Conclusion with regard to the management philosophies

A better understanding of the knowledge economy philosophies led to the conclusion that one philosophy should not be utilized while another is totally excluded. Each has valuable components and as such these philosophies should rather be seen as three sides of the same triangle. Depending on the point of focus, one philosophy may be more prominent but all contribute to the success of the same structure. It therefore seemed inappropriate to correlate and establish which of these is better than the other. For the purpose of this research it was decided to concentrate on the activities and tools associated with intellectual capital management because it appeared to be the philosophy which best suits both personal style and the requirements of the development stage of the larger organization (CSIR) and the service in question. However, an approach of 'use-whatever-tool-is-appropriate-never-mind-what-management-philosophy-it-supports' will be used should it be necessary to do so.

In the previous sections of this chapter, the impact of the knowledge economy on business in general was mentioned. The resulting management philosophies were identified and discussed but the impact of the information ecology on the library, as a specific type of institution, has not yet been addressed. If companies, in general, were adopting management styles that are congruent with the requirements of the knowledge economy, it would be illogical to think that libraries and information services would not need to make similar adaptations in their own management style.

2.5 Impact of the knowledge economy on the library as institution

If the key purpose of information is to inform people, it is logical to see the key role of an institution such as a library as to **collect and supply** information. In the heyday of libraries, extensive, expensive buildings were erected to house ever-expanding collections – just in case someone would one day need to gain access to a specific publication. The library was recognised as an institution of learning and certain standards, processes and procedures (all very time-consuming) were expected to be in place. Unfortunately, that time has passed and today collections

are constantly weeded because collection space keeps on shrinking and clients now know that it is sufficient for the information service staff to ensure just in time delivery of a source. Delivery of course is preferably in electronic format! In actual fact clients all have the means to help themselves and suppliers are continuously developing their products to be more end-user friendly.

If the key purpose of knowledge is to enable people to act on information and people no longer need just information but rather knowledge, libraries cannot continue to only collect and supply information. An institution such as a library should then rather be concentrating on the analysis, packaging and distribution of information so that the information is ready for use (Davenport and Prusak, 1997, pp 3 and 45). This opinion is supported and one could argue that, if there were one efficient supplier of information in the traditional sense, all other services could concentrate on higher value-added services. Examples of such focus areas include the effective research and the development of knowledge, creation of knowledge bases, exchange and sharing of knowledge, training, speeding up explicit processing of the implicit knowledge and making sharing happen. Libraries and librarians represent an indispensable link in the scientific system chain. Libraries must therefore pay attention to diffusion and conversion of knowledge. To be able to do so Shanhong (2000) suggests setting up virtual libraries and establishing digitised knowledge services. This is of course merely changing the collection format from paper to an electronic medium, which is more accessible. It does not fundamentally change the library or any of its functions.

Traditionally the conventional functions of a L&IS are to collect, process, disseminate, store and utilize documented information to provide a 'free' service for and to society. To keep pace with the knowledge economy era, Shanhong (2000) recommends that the L&IS needs to rather be:

- *a treasure-house of human knowledge;*
- *a participant in knowledge innovation; and*
- *an important link in the knowledge innovation chain.*

It is unlikely that it will be possible to do so by using conventional L&IS management practices.

The question remains: 'Where does one start?' Heifetz and Laurie (2001, p131) believe that leadership needs to instigate change when:

- deeply held beliefs need to be challenged;
- values that made the company successful are no longer as relevant;
- legitimate yet competing perspectives emerge;
- companies find it necessary to restructure or re-engineer; and
- businesses merge.

All of the above are applicable within the context of this research. Major changes within the information industry are changing the belief that a library is the only source of reliable information. The Internet and perceptions about the Internet are

responsible for many of these changes. More and more companies are seeking alternative ways in which to gain access to information without carrying the burden of library expenses. Even when the L&IS is maintained, detailed cataloguing and indexing, which always was done locally, is now available for download from large repositories. The e-business technologies are making the re-engineering and even automation of processes possible and the merging and outsourcing of libraries are quite common. It is believed that, within such circumstances, it is especially those who head or lead the organization that have to adopt helicopter or balcony vision and take a first step for the new and exciting journey that lies ahead.

As a first step to accommodate the knowledge economy many L&IS managers, as is the case with CSIRIS, opted to migrate from a pure, library to an information service. One could argue that this was merely a change in name. However, in most cases, a definite change from the typical 'physical labour' environment to one where technology is for example, being used to automatically push selective dissemination and alerting services to clients, is common. A second example of more efficient labour is the internationally shared cataloguing process[1].

The pressure to keep pace with the knowledge economy can only be expected to increase. Time, technology, geography and finances are all contributing factors to the required changes. Local companies very often have international offices situated in a variety of time zones and geographical locations. Information services staff members are expected to ensure that these offices have access to exactly the same quality service as local offices get, as few companies still think it necessary to open a library or for that matter an information service at each location.

The pressure on financial resources is a universal problem. As a result there is at present a major boom in consortia formation. Within these consortia, the intention is not only to save money and negotiate advantageous contracts, but also to learn from each other and to share resources.

Given the current external environment, creating a growth environment within library and information services is a daunting and yet challenging task. Within CSIRIS IMPS, the impact of the knowledge economy was just as obvious. Previously uncoordinated attempts were made to weed stock, to consolidate cataloguing and to negotiate contracts with suppliers such as Sabinet Online. During the year 2001, concerted efforts were made to change the traditionally very labour intensive tasks of stock procurement, cataloguing, stock maintenance, ILLs and paper journal circulation into tasks that were done more efficiently.

Before addressing the actions to be taken for effective intellectual capital management within the information services context, the impact of the knowledge economy on the individual needs to be understood. The next section will therefore attempt to briefly consider the impact on workers earning their living in this new economy.

[1] In South Africa specifically this effort is managed by the way in which contributions are made to the joint catalogue hosted by Sabinet Online.

2.6 Impact of the knowledge economy on the individual

There is no doubt that all workers are affected by the impact of the knowledge economy. The impact is perhaps felt most intensely by managers. Not only are managers expected to keep track of all developments and changes in terms of steering their organizations in the correct strategic direction, they also need to take cognisance of the change in the fundamental role they have to play. It appears that the only truly successful managers are those who are able to make the transition from management to leadership. The role of the leader is therefore discussed in much detail below. This was done because it is believed that should the leaders within the organization, specifically leaders in the library and information sector, not be able to take advantage of the opportunities made possible by the knowledge economy, there is little chance that the organization as a whole would be able to survive and prosper within this knowledge economy. This of course fits in with Obeng's (1997, p 4) opinion that in most organizations the people at the top limit (or accelerate) the speed of learning and therefore also the organizational potential.

In this section the impact of the knowledge economy on the worker is also discussed. It is especially reward and recognition that is addressed in more detail. Lastly the impact on the information services worker is addressed.

2.6.1 Impact of the knowledge economy on the role of the manager

Roos and Roos (1997, p 414) make the readers aware that until the 1980s the role of management was to figure out smart ways to combine products and markets - given the bargaining power of suppliers and customers, entry barriers, and potential substitute technologies and/or products. The strong message of the economist-driven 'industrial organization' line of thinking was to value the environment rather than the inside of the firm. During the 1980s some managers realised that this view was somewhat distorted. It slowly became acceptable to suggest that competitive advantage did not arise only via various product-market combinations. On the contrary, many realized that advantage was mostly due to differences in organizational resources. Managers started looking inside the firm to find the real sources for sustainable business. It was already quite clear by 1990 that it was no longer sufficient to have one person or a select few people within the organization learning for the organization: one leader was just not able to keep track of all developments and changes (Senge, 1990, p 4). Therefore staff members simultaneously needed to learn that leaders do not have all the answers and neither are they able to make all problems go away. Suddenly the most valuable manager was not necessarily the one with most knowledge about the external environment. The era of the knowledge focused leader had started, even though they still were referred to as managers. These managers knew that 'knowledge', regardless of whether it was called invisible assets, absorptive capacity, core competencies, strategic assets, core capabilities, intangible resources, organizational memory, or other concepts carrying similar meaning, was seen as equal to sustainable competitive advantage.

Knowledge focused managers realise that knowledge focused organizations do not maximize sales volume in monetary terms only. They select customers according to how much total revenues they bring, both tangible and intangible. Products and services are developed with the focus on the knowledge they bring to the customers and how they enhance the customer's capabilities to serve their customers. Therefore, information systems are developed for measuring intangibles and knowledge flows and the purpose is learning, not control. Sveiby (2000b), for example, tells us that a knowledge-focused manager creates learning opportunities, encourages knowledge sharing, sees staff turnover as a loss and considers recruitment too important to be delegated to the human resources department. However, from a manager's point of view, the creative knowledge age worker causes complications. Sveiby (1995) informs the reader that *the creative person tends to be more loyal to the task or the idea, or even the profession than to the organization.* The personality of the new worker tends to be contradictory to teamwork. These workers firmly believe that *a committee never designs an excellent article*. They do not like to make compromises. The typical knowledge age, talented individual is almost the polar opposite of the loyal subordinate – in short a nightmare to the manager in a large industrial organization. It usually therefore takes only a few interactions for the astute manager to realise that it would serve himself, the employee and the organization best if he opted for leadership rather than management principles.

Knowledge focused managers realise they cannot manage knowledge (it is impossible), nor people (it is less and less possible), but rather the environment in which knowledge is created. This space is both the intangible culture and the tangible environment, such as the office. The layout of the office thus emerges as a top priority – something which all consulted authors mentioned at one time or the other. It appears that knowledge focused managers recognize the value of the informal information networks, so they leave their hideaways on the top floor and move their desks on the same floors as the knowledge workers. The coffee machine (or water cooler) is recognized as a catalyst of creative encounters, so it is placed in the centre with ample social space and not tucked away in a corner.

It is clear that the knowledge-focused organization is different and that it is not an easy place to control with traditional industrial era means. The most important question managers ask is: 'How do you stay in control when the primary production factor – creativity of the staff – flourishes best when you don't control it?' Sveiby (2000b) advises that in such a world the managers' power base is their relative level of knowledge. The manager therefore needs to realise that his role needs to shift from one of supervising subordinates to one of supporting colleagues. To really understand what this means, one needs to only look at what is happening at the surviving 'dot-com' companies. As these companies mature, they employ experienced managers who can provide inventive, explosive communities of practice with the structure of process, but who will not suffocate practice while they are doing so (Brown and Duguid, 2000, p 80).

With the knowledge that the manager needs to support rather than supervise, the fundamental management problem is how to align the objectives of managers and

workers with those of the owners (or in the case of service organizations with the objectives of the stakeholders). Grant (1997, p 452) is of the opinion that if knowledge is the pre-eminent productive resource, and most knowledge is created by and stored within individuals, then employees should be seen as the primary stakeholders. The principal management challenge is therefore not reconciling divergent goals, but establishing the mechanisms by which co-operating individuals can co-ordinate their activities in order to integrate their knowledge into productive activity for the organization as a whole. Again this points to leadership rather than management and so the following section is utilized for an in depth look at the requirements for a knowledge economy leader.

2.6.2 Impact of the knowledge economy on leadership and the role of the leader

Leadership in contrast to management is a popular theme for many a book and article. What is clear is that a 'Do it as I say you do it, because I am the boss'-attitude will in all probability never again be an acceptable management style (Cialdini, 2001, p 72). The leader's role in the modern organization is defined rather as that of **designer, teacher, and steward**. The leader is seen as a person who can build shared vision; challenge prevailing mental models; and foster learning for everyone (Senge, 1990, p 340-360). The leader is seen to be responsible for building organizations where people are continually expanding their capabilities to shape not only their own future but also that of the organization. Lastly, the task of the leader is not about managing **hired hands**, it's about energising **hired minds** (Bontis, et al., 1999, p 391).

In terms of authority, Sveiby (1995) sees leadership as a case of 'managing the milieu'. He is of the opinion that doing so requires that the leader knows the profession in contrast to the traditional belief that a professional manager only needs to know how to manage. Cialdini (2001, p 72) states that the new business world of cross-functional teams, joint ventures, and inter-company partnerships requires leaders who practice the art of persuasion rather than managers who have a need to exert authority. Within an exclusively 'knowledge worker' environment, it should be possible to be leader only and to let each worker be responsible for what used to be management activities. It is however doubtful that this is already totally true within an environment where much of the daily work is routine. At times it may still be necessary to look at the possibility of combining the role of leader and manager.

The view expressed by Kotler (2001, pp 85-86) was, within the context of this study, regarded as advisable. He sees leadership and management as different but complementary actions. He makes the following distinction between the two elements:

- On the one hand management is about coping with complexity. Good management brings order and consistency. These are prerequisites for the quality and profitability of products. Management is about controlling and solving problems, both formally and informally. It is about planning, budgeting and staffing and it is about putting in place mechanisms to measure

results. It is the right thing to do when people have to complete routine tasks successfully day after day. Management is neither exciting nor glamorous.

- On the other hand leadership is about coping with change. It is about soldiering on in a business world that gets more competitive and volatile by the day. It is about setting direction and aligning staff and it is about articulating feasible ways to achieve goals. It is about motivating people to achieve and making work important to them. It helps people to grow professionally and enhances their own self-esteem. The following elements all form part of successful leadership:

Vision:	It is not so much the originality but rather how well it serves the interests of important constituencies, customers, stakeholders and employees and how easily the vision can be translated into a realistic competitive strategy. Senge (1990, pp 150) sees vision as the creative tension between the current reality and the place where one wants to be. He is of the opinion that vision is a true source of energy.
Planning:	But not in the same way as what was done before. Long term planning is time consuming and whenever something unexpected happens plans have to be re-done. It is therefore recommendable that a long term vision is supported by a series of shorter term, less cumbersome plans to reach the set goal.
Alignment:	In contrast to organizing and staffing where staff members are placed within a certain structure and within the right context, alignment is about communication and making sure that all staff members are all facing in the same direction. It is equally applicable to bosses, peers, colleagues, suppliers and even customers. Using charts and documents to show improvement in quality or reductions in costs are very important tools in supporting alignment.
Credibility:	This appears to be the key to success. It is the consistent link between words and deeds that builds a reputation for trustworthiness.
Empowerment:	When staff members are empowered, lower level employees can initiate actions without fearing retribution as long as it serves the same goal. When all are aiming for the same target, there is less of a chance that the one's actions will stall another's because they have come into conflict.

Kotler (2001, p 86) warns that the one (management) cannot be practiced exclusively of the other (leadership). He is of the opinion that managers promote stability while leaders push for change and it is only when an organization embraces both these elements that it will be able to survive the turbulent times ahead. This opinion is shared but with the proviso that the ratio between management and leadership should not be seen as 50:50. One should rather lean more heavily towards leadership. This may seem like a daunting task but fortunately Heifetz and Laurie (2001, p 140) assure the reader that leadership eases the burden of having to

know all the answers and bearing the entire 'responsibility' load. From the literature consulted, the conclusion was reached that solid management skills should be seen as the minimum acceptable entry-level standard and that, when leadership skills are added, the individual has the ability to become an extraordinary leader. With Heifetz and Laurie's assurance in mind, it was decided to investigate the art of leadership further.

The Harvard Business Review issue of December 2001 was devoted entirely to leadership and provided a good spread of overview, historical, case study and practical information articles, many of which were of particular value for this section. For example, Kellerman (2001, p 15), in her overview of must-read works on leadership, came to the conclusion that leadership is always contextual. What works in one era, setting or organization does not necessarily work in another. She also stated that there is a difference in writing about leadership and writing as a leader. She was able to identify seven leadership types as well as the most prominent writer(s) - should one wish to further investigate any specific style. Her findings are provided in brief in Table 2.2 below. To make the content more locally relevant, examples from current Southern African politics and the work of Grulke (2001) were utilized to augment the table with possible Southern African examples.

Table 2.2: Leadership styles

Leadership Style	Characteristics	Examples	Southern African examples
The pragmatist	A pragmatic leader: • Avoids issues that make him hateful or contemptible. His name is not associated with descriptive words such as variable, light, effeminate or pusillanimous; • Strives towards greatness, spiritedness, gravity and strength; and • Maintains order – even when at times it requires cruelty.	The Prince as described by Niccolo Machiavelli.	Cyril Ramaphosa (Johnnic) Thabo Mbeki (President)
The hero	Kellerman, as does Senge (1990, p 40), supports the notion that the human race needs heroes. It does appear however that the only requirement for a hero is to show strength of character when the opportunity arises. Once the opportunity passes the leader needs to fall back on another style or look for new opportunities.	Jack Welsh Bill Gates Lee Iacocca	Mark Shuttleworth (The first African in space)
The father figure	This leader realises that groups depend on their leader to give them identity and a sense of purpose. He understands that the need to follow grows from a childhood dependency on an omnipotent father and god. The father figure therefore sees himself as the primal father and believes that followers have a 'passion for authority' and a 'thirst for obedience'.	Freud	Nelson Mandela (Ex-President of South Africa) Raymond Ackerman (Pick 'n Pay)

Leadership Style	Characteristics	Examples	Southern African examples
The tyrant	Followers sometimes follow evil and incompetent leaders. It was established that rather than leading and protecting his followers this type of leader dominates, controls and terrorizes those who follow him. Hitler, as an example of this type of leader, was able to recognize and use the interdependence between the leader and his followers. This type of leader is seen as a motor that is able to swing a movement into action. Kellerman is of the opinion that the modern organizational version of this type of leader is where one person has too much control. It is typically where power, authority and influence are distributed inequitably.	Hitler	Robert Mugabe (President of Zimbabwe)
The organizer	This type of leader has had the major insight that organizations are essentially social organizations and that the business process that matters most is the social process. They realise that leadership does not annul the laws of nature nor does it substitute the elements that are essential to cooperative effort. Leadership does however give common purpose. It makes incentives effective and it makes cooperation possible.	Chester Barnard	Kader Asmal (Minister of Education)
The people's servant	Typically this leader is chosen to replace a previous regime. Here the most important characteristic is energy. Feeble leadership is not tolerated in such circumstances.	Hamilton, Madison and Jay in 'Federal Papers'	Mbazima Shilova (Major of the Egoli Metropole - Johannesburg)
The liberator	The name says it all. Kellerman used two Afro-Americans as typical examples of this type of leader. King is of course known for his civil rights writings while Friedan contributed towards the liberation of women.	Martin Luther King Betty Friedan	Mafika Mkwanazi (Transnet) Steve Tswete (deceased Minister of South African Police services)

It cannot be claimed that the table is truly an accurate reflection of all leadership styles. In all probability it is more correct to say that the successful leader needs to be aware of the wide variety of leadership styles. A good leader should have an ability to choose a style of leadership that is most appropriate for the applicable situation and environment. Once a new situation arises and it is appropriate, the style should be changed. Also, in all probability, a few favourite styles should suffice rather than ensuring that each and every style is practiced.

Selecting an appropriate style does not in itself ensure that one practices good leadership. The editorial committee of the *Harvard Business Review* of December 2001 asked a number of acknowledged leaders to distinguish between good and bad leadership. The lessons these leaders (Eisner, et al., 2001, pp 27–38) have learnt through experience are reflected in Table 2.3 on page 2.53. In analysing the variety of opinions it was possible to establish that leadership is about action. It is about showing and not telling and it is about setting the right example. At least two of the

respondents felt that leaders should take up the challenge to employ staff members who could be regarded as intellectually more astute than themselves. Lastly, the processes of making sure that all staff members share in the set vision as well as the development of a sense to know what is happening at grass roots level appears to be the most prominent issues to take note of.

Table 2.3: The lessons learnt from leadership experience (Eisner, et al., 2001, pp 27-38)

Lessons	… and more lessons
Leadership surfaces when there is a quest for excellence. A passion for doing the best possible (Michael Eisner).	If you are too forceful and passionate you break the spirit in other people (Daniel Goldin).
Leading is about being compassionate (Percy Barnevik).	If you move too fast you lose followers. Move too slowly and the same happens. Equally bad is moving forward while followers have not yet bought into the process of change (Anne Mulcahy).
Strong leadership is about creativity that does not come from order, calmness and stability. It is about sorting through large, complex inputs. One should maximise the followers' well being and not necessarily their comfort (Chris Argyris).	If you are unaware of your own mistakes you are not able to respond to them (Chris Argyris).
If you want to lead, make quick decisions and hire staff members that are smarter than what you are (Ben Bradlee).	You may survive if you hurt shareholders and/or employees but you have no chance if you hurt your customers (Victor Meneses).
A leader's time is finite and should not be squandered (James Conlon).	Don't let short term concerns shape policy (Laura D'Andrea Tyson).
If you believe in something and have a passion for it, you should have the courage to stand up for it. You have to be persistent no matter how long it takes (Eleanor Josiates).	If an organization is to survive it has to be bigger than the founding member's ego (Ricardo Semler).
Even when you are sure you are right do not bypass the process of consensus building (Francis Collins).	Do not impose changes that are not supported by the organization's stakeholders or that do not fit in with the organization's mission (Laura D'Andrea Tyson).
Winning is about having the best people in your team. Look for staff smarter than you (Jack Welsh).	An inability to ask questions easily skews reality. Get to know what is happening at all levels within the organization not just at your own. Do not be afraid to ask seemingly dumb questions (Mike Parker).
If you have a strong set of values based on the organization's mission you are able to measure each decision against those values. If the decision passes the value test you need never to worry that the decision will be questioned (Noel Tichy).	The leader is the organization's main source of energy. To be able to be that source the leader needs to be able to tap into personal sources of energy (Noel Tichy).
It is not good enough to just do the right thing. You also have to have the right motives (Rajat Gupta).	Know your own strengths and weaknesses. Leaders earn respect through humility and not arrogance (Laura D'Andrea Tyson).
During the review phase of a project - always reflect on the three reasons why the project went right or why it failed. Learn from these lessons and then move forward (Mike Parker).	Don't let personal desires get ahead of good judgement (Dick Brown).
Incremental changes are rarely worth the expenditure of calories. Be bold and take chances (Dick Brown).	Arrogance does not equate leadership. Leaders listen and are hungry to learn. They are sensitive to other people (Noel Tichy).

As a further piece of advice on good leadership, it was established, through research done by Goleman, Boyatzis and McKee (2001, p 44) that a leader's mood and behaviour drives the mood and behaviour of his subordinates. They established that high levels of emotional intelligence create an atmosphere of trust, information

sharing, healthy risk taking and learning. In contrast, when emotional intelligence is low the climate changes to one of fear and anxiety. If this is then the case it is fair to say that the leader's most important management task is to manage a healthy inner self. They (2001, pp 48–51) therefore suggest that each leader asks and respond to the following five questions:

- Who do I want to be?
- Who am I now? (Typical 360º evaluation.)
- How do I get from where I am to where I want to be?
- How do I make the change stick?
- Who can help me?

The knowledge gained from the process of gaining the answers to these questions should enable the leader to at least identify personal focus areas. These focus areas, together with the principles identified by Heifetz and Laurie and those identified by Cialdini, as set out in the section below, should provide a leader with sufficient tools to align him with the latest trends in leading a winning organization!

To aid the leader Heifetz and Laurie (2001, p 133-137) identified six principles that are of use when one needs to lead in turbulent times. Cialdini (2001, pp 74-79) identified six more. Heifetz and Laurie's principles deal more with the practical aspects of leadership while Cialdini's principles stem from psychology rather than business. (He is therefore quick to remind the reader that the rules of ethics and honesty are inseparably part the principles.) It soon became clear that these principles fit in with those identified by Senge (1990, pp 373-377) for the disciplines of systems thinking, personal mastery and mental models. Senge's disciplines were mentioned as part of the section on learning organizations. Taking cognisance of both the practical and the more psychological seemed to make sense and a combined list of principles was created. This list, which was augmented with what is believed to be the appropriate discipline, as identified by Senge, is reflected below:

- Develop balcony vision. See the total picture so that you can identify mistakes and build on good practice. (Senge speaks of this as part of personal mastery.)
- Identify the adaptive challenges. Know what or who may cause the downfall of your business and why. (This links into Senge's mental model discipline.)
- Regulate distress. (A part of Senge's systems thinking discipline because it is necessary to make sure that the delicate balance between feeling a need to change and being overwhelmed by change is maintained.) To do so one needs to:
    - Sequence and pace work. Not everything is important. Do not start new initiatives without stopping others and do not start too many new initiatives all at the same time.
    - Understand that the leader is responsible for direction, protection, orientation, managing conflict and shaping norms. Each of these needs to be approached in an appropriate fashion. The leader is also

responsible for communicating to staff members that they are capable of tackling the tasks that lie ahead.

- Maintain disciplined attention. These items mainly deal with Senge's mental models discipline. The leader needs to step in, direct and re-focus when

    - staff focus only on the present technical problems instead of on the longer term goals;
    - sterile conflict replaces dialogue;
    - a need to blame the environment and the workload incapacitates staff members; and when
    - the team spirit fragments and protecting the own turf becomes more important than the goal.

- Give the work back to the people. This links back to personal mastery for this is where management learns to support rather than control and where workers accept and bear the weight of responsibility. As a first step staff members need to learn how to identify problems so that they, as a second step, can start seeking for solutions. Methods through which leadership can communicate and show support include the following:

    - participate in brainstorming sessions and workshops;
    - write newsletters;
    - provide staff with exposure to the public media;
    - become a pervasive presence;
    - demonstrate commitment through symbolic acts such as closing the executive dining room;
    - build collective self confidence – which comes from success and experience; and
    - allow staff members to take risks and back them when they make mistakes.

- Protect voices of leadership from below. Whistle blowers and creative deviants are often silenced when they speak out. It is however more useful when the leader assumes the balcony vision stance and enquires to gain clarity, understanding and impartiality rather than feeling personally offended. (Here as with the next six principles both the personal mastery and mental models disciplines make use of this principle.)
- Practice 'liking' people. People like those who 'sincerely' like them. To apply the principle would require that leaders uncover real similarities and offer genuine praise.
- Practice reciprocity – people repay in kind. To apply the principle would require that leaders treat staff in the way they want to be treated.
- Look for social proof – people follow the lead of similar others. To apply the principle would require that leaders make effective use of peer pressure. This is also known as deploying champions.
- Practice consistency – people align with their clear commitments. To apply the principle would require that leaders understand that there is a greater

chance that staff members would do what they say they will, once they have written the commitment in their own words. These commitments should be publicly made and visibly posted. A prerequisite is however that the staff member accepts the commitment and is not forced or tricked into the commitment.

- Ensure authority – people defer to experts. To apply the principle would require that leaders make their own expertise more visible – preferably more subtly rather than boastful.
- Remember the principle of scarcity – people want more of what they can have less of. To apply the principle would require that leaders understand that potential losses get a far bigger reaction than what potential savings or gains do. People also respond quicker and with more enthusiasm when they realise they have information that is not freely available.

To be able to do all of the above would require that leaders show strength of character and are capable of withstanding a multitude of varying pressures. Both Meyerson and Senge provide hope for those less sure of themselves. From the results of her research, conducted over a period of 15 years, Meyerson (2001, p 97) established that not all leaders are forceful and obvious. Many, especially those from minority groups as well as females, carry out their daily tasks in a reliable professional way. This happens to such an extent that they are barely noticed. However, the practiced eye is able to see the major changes they bring about without making big waves. These leaders, when given support from senior managers, are able to quietly challenge and change wisdoms, beliefs and values within the company. They gently provoke organizational cultures to adapt and change without causing confrontation and disruption. Meyerson's research is of importance within the context of this research. As is the case in most South African companies, part of the CSIRIS IMPS leadership challenge is the necessity to bring about changes in racial perceptions and attitudes. Neither confrontation nor disruption is known as the ultimate answer to changing either. Senge (1990, p 359) confirms that the most outstanding leaders very often are quite normal average people when measured against glossy magazine standards. What they do have however is a *clarity and persuasiveness of ideas and depth in their commitment*. He has found that leaders instil confidence in those around them. As a result *all are prepared to learn to achieve the results they truly desire*.

When functioning within a culture of true leadership, recruiting staff with the potential to be leaders is only the first step. Their career paths need to be managed. Kotler (2001, p 96) reports that corporations that do well in terms of leadership create challenging opportunities for their young employees. In doing so they understand that leaders need to gain experience by risking and making mistakes as well as by achieving success. To serve this end, it may be necessary to create a number of smaller units so that many challenging lower level management jobs become available. At the same time though, it is necessary to appropriately reward those senior staff members that successfully develop junior leaders. In doing so a culture of strong leadership is fostered.

Within the limited scope of this study it was difficult to identify suitable mentors for potential leaders. It was also found that the successful development of junior managers 'means different things to different people'. It could mean that the mentor looks for a slave to do all the tasks he is not fond of doing or also that the junior is set tasks that he or she is not yet experienced in dealing with. This results in continuous negative feedback and a feeling of despondency. From the followers' side there is at times an attitude that the 'chosen one' needs to come up with all the answers and responsibilities. Heifetz and Laurie's (2001, p 131) are of the opinion that *those followers who want comfort, stability and solutions from their leader are looking for a babysitter* is supported. It does however remain a challenge for junior managers to understand that real leaders ask hard questions and knock people out of their comfort zones. Leaders are responsible for managing the resulting distress. Once a leader understands the responsibility for the development of his own and that of the organization's human capital, he needs to know what will make learning happen: how to fast track learning and how to ensure that a learning curve grows exponentially rather than gradually for all.

The knowledge era does not only impact on managers and leaders. Followers too are feeling the impact and have to adapt to the requirements of working in the knowledge era. In the next section an attempt was made to identify and describe the impact of the knowledge economy on the typical knowledge era employee.

2.6.3 Impact of the knowledge economy on the worker

Fortunately, unlike conventional tangible assets, knowledge grows when it is shared. Each time a flow of knowledge between people takes place the resource is doubled. The most visible impact of the knowledge era is that there is a shift in focus from 'manual' skills and skill-formation to knowledge skills that enhances productivity and that improve economic competitiveness and personal effectiveness (Garrick and Clegg, 2000, p 283). Employees today, carry the tools of their trade with them - between their ears. *It is they and not their managers who are the experts and who must decide how best to deploy their know-how. As a result, what they do has more in common with work carried out by people in the professions and must be assessed not by the tasks they do but by the results achieved* (Stewart, 1997, p 48).

Badaracco (1991, in Preiss, 2000, p 328) talks of *migratory knowledge: capital that can walk out the door at any time*. To him the challenge lies in eliciting, representing and then prioritising the critical knowledge held in the minds of both managers and employees before they move on. Roos and Roos (1997, p 413) share this opinion and remark that the crux is that it is the individual, not the company, who owns and controls the chief source of competitive advantage. The knowledge era company therefore needs to serve and nurture the 'knowledge worker'. But at the same time knowledge workers need the value creating processes and infrastructure of the organization, as well as conversations with other knowledge workers to unleash and leverage their knowledge. It is foreseen that it may still take some time before both the organization and the knowledge workers find a 'win-win' balance that will work to mutual, maximum benefit.

Thinking 'win-win' does not mean job security. It is a fallacy to believe that the same number of staff members is retained when converting to knowledge era strategies. The successful utilization of knowledge means that less 'hands' are required. The staff members that are still employed as physical labourers are then also required to do the same if not more physical labour than their predecessors. Groth (1994, p 25-26) confirms that the trend towards greater use of mental-based skills and talents rather than the application of human physical power will accelerate. Physical labour that survives will do so most probably as a result of levering physical labour with tools and methods derived from mind labour. To accomplish this workers will be required to move away from functional silos (or the 'that-is-not-in-my-job-description-syndrome') that can create unnecessary boundaries within an organization. It can therefore be anticipated that the knowledge era workers would need constant skills training. Due to the expense of skills training it could be expected that some employers may hesitate to make training investments in areas that have long term returns. This is especially true when operations, measurement, and reward are done on a short term basis. Thus it may happen that a current labour force is exploited due to the fact that there is no further investment in the skills of the workforce. The cost of this strategy may remain hidden in the short term. But, just as failure to maintain and reinvest in plant and equipment results in a plant that is no longer competitive, the outcome of a deteriorating labour force, that no longer has value in a changing environment, will become apparent when the company could least afford it to show.

It is therefore essential for a knowledge worker to ensure that he is employed by an organization that values its employees as its source of competitive advantage. A sure sign of such a company is that it, at the very least, has an appointed senior member of staff who is responsible for the company's knowledge drive. This should of course not be a token appointment and Lank (1997, p 409) suggests that possible responsibilities for such a person should include the following:

- Identifying the tacit and explicit knowledge assets currently owned or accessible by the organization. In effect, this is answering the questions do we know what we know?
- Developing the appropriate mechanisms to create repositories, sharing mechanisms and maintenance processes for this knowledge base.
- Identifying knowledge gaps and mechanisms for filling them (recruitment, re-profiling, and so on). In other words, identifying what we do not know.
- Managing the investment in processes, information technology and roles to move knowledge and expertise around the organization and establishing measures to determine the return on that investment.

Appropriate skills and experience for this member of staff to have are the following:

Personal Qualities	**Professional Experience**
Change agent	Organizational development
Able to influence at senior levels	Business process development
Results-focused	IT expertise: Intranets, groupware
Systems thinker	Project management
Understanding of the business	Consultancy skills

Without such leadership the company would in all probability be paying lip service instead of ensuring real valuable development opportunities for its staff members.

However, to think that all responsibility rests with the company only is also not true. One of the core requirements for today's employees is to keep oneself employable. To stay employable one needs to live a life of continuous learning. The following list of characteristics displayed by learning individuals and created by Duffy (in Wiig, et al., 1997, p 33) tells it all. Through his research he established that learning individuals:

- think systematically;
- accept change, indeed are invigorated by it;
- have a high tolerance for complexity;
- are constantly alert for new information;
- welcome empowerment by the organization;
- link the pursuit of knowledge to life goals;
- see knowledge as fuel for personal growth;
- use information technology effectively to facilitate communication and access to knowledge;
- are creative;
- are willing to make decisions;
- never stop learning;
- are not afraid to question the status quo;
- are keen to solve problems and help colleagues to do so too;
- continuously search for ways to do things cheaper, better, faster;
- are willing to experiment;
- can work in teams;
- are willing to communicate and share knowledge;
- can interact with people as well as technology;
- are conscious of the dangers of information overload;
- are committed to their organizations when they are learning organizations;
- are not complacent;
- think work should be fun; and
- are strongly customer focused.

For the company to assist in developing its workers to display the characteristics mentioned above, it needs to understand the nature of its employees. Peter Drucker (1991, in Sveiby, 1995) divided workers into one of three groups, depending on what they can do to raise their productivity:

- First category where ***productivity means quality***, like scientific work in a research lab. To raise productivity, the employee can only ask: 'What works?'
- Second where ***quantity and quality together constitute performance***. Examples are architectural draftsmen, reporters, nurses, and engineers. Raising productivity in these jobs requires both asking the question 'what works' and analysing the process step by step to make it work better.
- Finally, there are a good many 'industrialized' service companies (that do jobs such as filing, handling, making hospital beds, and so on) in which performance is defined by making and moving things: that is **largely *by quantity***. McDonalds fits into this category. Here the issue is – it works … how can we do more of the same?

Sveiby (1995) sees knowledge workers fitting into the second category. These employees have the competencies and skills to improve both quantity and quality. As a result the demands of knowledge workers, in terms of the terms and conditions of the employment 'contract' with the firm, are increasingly idiosyncratic, and increasingly expensive for the firm (Demarest, 1997, p 383). As a result it can be expected that the employer will continuously put pressure on productivity to claim their pound of flesh. In research done by Kelly and Caplan (1993, in Cook, 1997, p 60) amongst engineers at the Bell laboratories, they established that it was relatively easy to distinguish between star (or highly productive) performers and those who were middle of the road performers. They established that star performers all showed the following tendencies:

- They took initiative. They accepted responsibilities above and beyond the stated job. They volunteered for additional activities and promoted new ideas.
- They had strong networks. They, as a rule, immediately got direct access to co-workers with technical expertise and they also shared their own knowledge with those who were in need of it.
- They were able to self-manage. They regulated their own work commitments, time, performance level and career growth.
- They were effective team members. They assumed joint responsibility for work activities, co-ordinating work efforts and for accomplishing shared goals with co-workers.
- They showed leadership. They were able to formulate, state, and build consensus on common goals and work to accomplish them.
- They were also good followers. They helped the leader to accomplish the organizational goals and thought for themselves rather than relying solely on managerial direction.
- They were able to see from a variety of perspectives. They could see their own job in context. They could look at it from the point of view of the customer, co-worker as well as the manager.
- They were able to 'show-and-tell'. They were able to present their own ideas persuasively in written and/or oral format.

- They showed lots of organizational savvy. They could navigate competing interests, promote cooperation, address conflict and in general got things done.

The items listed are all 'soft' skills that mainly relate to communication and interpersonal relationships. This is not something that the 'middle-of-the-road' performance evaluation system would concentrate on. Neither is it easy to put an appropriate monitoring system in place that would be able to provide reliable feedback regarding this type of contribution.

As a result Demarest's (1997, p 383) warning that formal systems need to be in place or it is close to impossible to:

- assess the demands of knowledge workers relative to their contribution to the firm's knowledge bases;
- form an adequate strategic assessment of the damage done to the firm by the loss of an employee;
- systematically require high-value knowledge workers to embody their knowledge within firm products, services and practices to prevent the loss of intellectual capital when the worker in question leaves the firm;
- understand the knowledge worker in the context of her working network, so that promotions and assignment changes do not damage productive knowledge communities within the firm.

When appropriate systems are in place it is predicted that employers should expect significant pressure to individualize reward and recognition systems. The knowledge era worker expects to be paid well but monetary reward need not be the only appropriate way in which knowledge workers could be recognized. This issue is addressed in more detail in the next section.

2.6.4 Impact of the knowledge economy on reward and recognition

Reward and recognition will inevitably continue to play an important role in every worker's life. The modern employee is said to want more control over the structure of the reward system. Pedler, Burgoyne and Boydell (1991, p 207) make the reader aware that alternative reward systems break former taboos surrounding hierarchy. This means that staff members lower down the management hierarchy may earn more than their managers. According to Lank (1997, p 410) a variety of studies have shown that monetary reward is by no means the principal motivation for knowledge workers. Professional recognition and the opportunity to work in challenging areas with interesting people also act as significant motivators. It is also debatable if all cultures would be motivated through pay. This too could warrant research because it appears that South Africans do not appreciate any reward other than money.

'What exactly should one reward?' is perhaps also a question that needs answering. Although a ready answer is not available, it is essential that 'knowledge economy'

reward systems make provision for and in fact ensures that people take time out to share their knowledge (Jooste, 1997, in Wiig, et al., 1997, p 98).

The ultimate question remains 'How does one reward?' in these changed times. In the knowledge era 'money only' should in fact be the last resort as reward. Ideally rewards, recognition, and incentives should be seen as those actions that are able to expand the employee's self-mastery, his professional knowledge, his sphere of influence and potentially the sphere of responsibility. Hackett (2000, p 9) claims that their knowledge-sharing systems, which allow peers and management around the world to acknowledge and appreciate contributions by colleagues, often becomes reward in itself due to the recognition received. The *American Management Association* ([2002?]) in turn recommends the following as rewards:

- **Special assignments.** Offer staff not more of the same work they do daily, but interesting, challenging new work. Many find that stimulating.
- **Offer opportunities for high visibility.** Everyone wants to be acknowledged for doing a good job. And all it takes is to offer praise publicly. Mentioning members' contribution at staff meetings or via e-mail messages that tell key personnel of an individual's accomplishment is a technique that is free, easy, and well received by everyone.
- **Give time off.** Time away from work to take care of personal business or spend a little extra time with friends and family, or just stay at home, is another great way to recognize employees. It doesn't matter if it is a few hours or a full day; the opportunity to get away from the stresses of the office makes it a valuable — and beneficial — reward. Those who get time off will return refreshed and grateful for the recognition that they received.
- **Share information.** How is the company doing? What about the department? What about Project X? It may seem absurd to suggest that sharing such information will make employees feel more valued but that's very much the case. You want to know as much as possible about what's happening in your company. Likewise, so do your employees. Sharing what you know not only will make your employees able to make better decisions but also demonstrates to them that you value them.
- **Provide feedback.** We get so wrapped up in day-to-day routine that we forget how important it is to employees to know how they are doing in their jobs. Ask them to join you for lunch, and then ask them whether they have any questions or need help with their work. Provide them with feedback on their performance. Praise them for doing a good job—don't wait for the next quarterly review. Use this and every other opportunity to let them know how they are doing so they are better able to respond to your needs and to the needs of the department.
- **Make employees partners.** Involve them in decisions that affect them. Doing so demonstrates that you respect their judgments. Besides, employees are closest to the work and in the best position to see solutions when a problem arises. So the insights they offer can have a huge benefit for you, if you listen to them.
- **Empower them.** Let your employees do the work the way they see fit. Don't hover or over-control. Rather, give them the independence that their work demonstrates they deserve. Provide them with the necessary training and then give them the room to decide how they get the work done. It's a further step in making employees feel like partners in achieving the corporate mission.
- **Celebrate their successes.** Whether it is tea and cake in the morning, or pizza or sandwiches at lunchtime, call a break from the work to celebrate individual and group achievements. The group will appreciate the recognition and you will appreciate the loyalty that comes in return.
- **Provide flexible work hours.** Some jobs just can't be done at home but there are many that can. Give employees flexibility in deciding their own work hours and their own workplace. It can be very motivating.

- **Increase employability via training.** In today's times, you can't provide job security but you can offer career security via training to keep managers and employees abreast of latest management and technological skills and developments. You'll see a return on investment in subsequent job performance and the employees' commitment to you as someone interested in their professional development.

Other rewards that could also be considered include performance related pay, consideration for personal constraints such as providing for workplace nurseries, security of employment, a flatter workplace hierarchy and royalties for ideas that are implemented or exploited (Pedler, Burgoyne and Boydell, 1991, p 207). Whatever the reward is, it remains recommendable that all reward systems are transparent and fair.

While all of the above have an impact on L&IS staff members, there are also some unique areas of interest that are reflected in the section below.

2.6.5 Impact of the knowledge economy on L&IS staff

Top MBA recruits no longer find as many positions in manufacturing companies. Nowadays, the career services offices of many business schools report that most new graduates secure positions with management consultants, accounting firms, investment banks, law firms, software developers and ***information brokers*** (Bontis, 1998, p 64). Information staff members need to realize that they too have new roles to play in the new economy. They do not need to unlearn everything they knew in the old paradigm but they do need to repackage their own knowledge and skills to suit the environment in which they have to live. Davenport and Prusak (1997, p 130) suggest that information workers see themselves as:

- information innovators: being creative and creating new information and presenting it in new ways;
- information editors: making information more meaningful and putting it in context;
- information directors: working closer to the client and adapting what is available to suit their particular need on time and under budget;
- information producers: focusing on selling information to those who need it in the format that they need it; and
- chief content officers: overseeing the information environment for the company making sure that content rather than technology is seen as the solution to business problems.

These roles fit squarely into Drucker's knowledge worker category (second category) as mentioned in section 2.6.3 on page 2.60. However, to be a successful knowledge worker the 'new' information professional is required to be *a person who engages with users rather than transfers facts, makes more money than what is spent, and innovates more than what she preserves* (Davenport and Prusak, 1997, p 133). This links to Toftoy's (2002, pp 46-47) opinion that information workers should see themselves as entrepreneurs and develop the following characteristics: passion and enthusiasm for what they have chosen to do; trustworthiness – it develops loyalty; creativity, inventiveness, originality and a daring nature – to become adventurous;

persistence, responsibility, flexibility, self-confidence, perceptiveness and salesmanship - to survive in the new work environment, and good communication skills – so that they can say what they are doing but also listen to feedback when it is given.

The question to ask, with the new roles and the characteristics in mind, is what should the key tasks for information specialists be? From the work of Church (2000, pp 22-24), Davenport and Prusak (1997, pp 121-127) and Johnson (1998, pp 53-55), it was possible to identify the following:

- Assisting users to deal with information overload. Pruning or sifting or gate-keeping - getting rid of the obsolete, the irrelevant - being an information editor.
- Providing context or making cross discipline connections - historical context will explain reason, comparison induces action and in a global society cultural and social context should not be ignored.
- Competing with other professions to provide the most appropriate access to the most reliable information supply chains.
- Enhancing style - adapt the style of presentation to the situation (use humour, slick graphical presentations, e-mail and post-it notes effectively), allows users to 'play' and interact and remember that dramatic presentation is much more likely to have a lasting impact.
- Managing the new communication technologies. Choosing the right medium, technology is allowing for more and more effective media (video conferencing, e-mail, hard copy, slides, sound), helping those who have to present information, to choose the right medium is an important value addition.
- Teaching and facilitating the use of information – having the ability to communicate and work with other people to ensure the correct results for your client.

To be able to perform these tasks requires an intimate understanding of the real information needs. That understanding does not come from hasty interviews or focused discussions. It comes from building a relationship and communicating over a prolonged period of time. According to Davenport and Prusak (1997, p 116) the trick seems to be in not only passively accepting user requests and delivering what is asked but to develop information sources, channels and programmes for users who don't yet know they need the information. Church's (2000, p 24) advice adds to this. He is of the opinion that the information professional should not wait for change to happen and then try to adapt to it. One should rather push the boundaries and let creativity reign!

Within the context that this study took place, it is very easy to think that none of the above is really applicable. This is however not true. Looking at the initiatives discussed in sections 5.4.1 and 5.4.3, it can be seen that it is very easy to choose a different technology to do a job more efficiently or to provide training to allow users to gain access to reliable information. Having the right attitude, proactively looking for opportunities and using appropriate skills to develop the products and services

that are required by the market hold the key to success – even for those information staff taking care of support duties!

2.7 Summary

It is not yet clear exactly what the impact of the shift from the industrial to the knowledge-focused economy will be. There is little doubt that the implication will be more intense and have a larger impact than that of any previous evolutionary steps. This chapter was utilized to identify the variety of available knowledge economy management philosophies. These philosophies have come about as a result of the realization that previous philosophies, although they provide valuable building blocks for what has become the preferred way of leading the workforce, do not address all the requirements brought about by the new economy.

The management philosophies that were investigated are the following:

- learning organizations;
- knowledge management; and
- intellectual capital management

In this regard it was established that:

- A learning organization is an organization in which the individual experiences learning and development as such a positive drive that it becomes an internalised activity … almost a craving to learn! Peter Senge's work, on the disciplines required for developing a true learning organization, is central to the development of literature relating to the topic. Especially the laws associated with the disciplines provide clues as to what one needs to keep in mind when leading in the learning organization. The crux of applying learning organization theory is that one should progress beyond the first stage or loop of learning where newly acquired knowledge is collected and applied. In a second phase knowledge is used to improve individual processes while in a third phase acquired knowledge is utilized to redesign systems in order to have improved all the processes relating to the system.
- The overall purpose of knowledge management is to maximize the enterprise's knowledge-related effectiveness, to gain returns from its knowledge assets and to renew knowledge assets constantly. This implies that tacit knowledge must be transferred to explicit, shared knowledge - if it is to be of general and lasting value. It is clear that knowledge management is not something one can practice in an exclusive centralized department of an organization. Before being able to reap the benefits of knowledge management, each and every possible contributor to the knowledge store needs to be enthused by the idea and the environment should be supportive as well as enticing. It is also clear that the previously well-established hierarchical structures of command do not necessarily lead to really useful bodies of knowledge. Each and every contributor needs to be empowered and motivated for the whole process/system to be implemented successfully.

- Intellectual capital is defined as the difference between the book value of the company and the amount of money someone is prepared to pay for it - intellectual capital's value, both real and potential, is therefore greater than that of the financial capital. Put differently: intellectual capital represents intangible assets that usually do not appear on the balance sheet. It would however be a mistake to believe that intellectual capital management only has value for those companies where shareholders are the main stakeholders. The knowledge economy impacts on all individuals with no regard for the standing and purpose of either the individual or the company. In this section it was established that intellectual capital can be sub-divided into several other 'capitals' (that are also known by a variety of terms) but in effect the main components are human capital, structural capital and customer capital. It was also confirmed that financial capital is an integral and very important capital that cannot be ignored but that financial gain should be seen as proof that the other three capitals are sound and well rather than simply focusing on the balance sheet as only indicator of success.

It was also determined that, just as is the case with any other organization, libraries and information services obviously also require adaptations in management style. A better understanding of knowledge economy philosophies, led to the conclusion that library and information service managers should not utilize one philosophy exclusively. These philosophies should rather be seen as three sides of the same triangle! Depending on the point of focus, one philosophy may be more prominent but all contribute to the success of the same structure. For the purpose of this research it was decided to concentrate on the activities and tools associated with the management of intellectual capital because it appeared to be the philosophy which suits both personal style and the requirements of the development stage of the service in question best. However, an approach of 'use-whatever-tool-is-appropriate-never-mind-what-management-philosophy-it-supports' was accepted as the principle and was used when it was necessary to do so.

The last section of Chapter 2 considered the impact of the knowledge economy on the library as institution as well as on the individual as employee and as leader. In this context the impact on the information worker was also addressed. The influence of the knowledge economy on reward and recognition systems was briefly mentioned. Chapter 3 more specifically addresses the developmental aspects associated with building intellectual capital. As can be anticipated, some of the tools and techniques to do so are of course also relevant to either of the other two management philosophies.