Information managers –
do we need them?

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Abstract

Provision of information has improved by leaps and bounds over the last few years. However, there are increasing problems of information overload and timely, accurate retrieval. This raises questions as to the effectiveness of information management and information professionals. Or indeed, given the significant advances in technology, whether we need information professionals at all. This paper analyses key developments and trends in information and knowledge management and suggests how they impact the role of information professionals. Four scenarios are presented as to how the information manager's role may change in the future.

The Evolution of Knowledge Management

Knowledge management emerged into mainstream management consciousness in late 1995 (see for example Nonaka and Takeuchi, 1995 and Arthur Andersen/APQC, 1995). Since then, it has evolved through several overlapping phases:

- *Emergence Phase (circa 1995-1997).* The pioneering companies described their approaches at conferences. Despite the wave of new books and magazines on the subject, few companies had a formal programme.

- *Discovery and Relabelling (1997-1999).* Knowledge management was actively promoted as strategic, particularly by the large management consultancies. The term was liberally applied by many software and service suppliers who offered 'KM solutions'. Formal KM programmes and posts were initiated in a growing number of large companies.

- *Growth and Consolidation (1998 onwards).* Knowledge management becomes mainstream. It expanded into many business functions, became more geographically dispersed and became prevalent in many different sectors, most recently the public sector. It also became recognized as a distinct academic discipline, stimulating several new university courses and master's degrees.

- *Identity Crisis (2002 onwards).* With KM's growing maturity, there is increased questioning as to its distinctive essence. After all, knowledge is very pervasive, and many enterprise initiatives – such as innovation, ecommerce and customer relationship management – have a heavy knowledge emphasis. Significantly, many providers of 'KM solutions' have reinvented their products (again) as content management, portal or enterprise information solutions!

And all the time that knowledge management has been evolving, information management has been present as an important foundation for the management of explicit knowledge. Indeed, some of the hasty relabelling of document and content management systems in the late 1990s as knowledge management solutions did KM a disservice. KM, after all, embraces the management of tacit knowledge (that in people's heads) as well as the explicit knowledge that technology can more readily handle.

Knowledge Management Today

Today's more balanced view of knowledge management is therefore a combination of managing explicit information resources as well as managing the working environment and people so that tacit knowledge is more readily developed, shared and exploited. A simplified caricature of this is to represent knowledge management as two main strands of activity – managing content (e.g. in documents and databases, on intranets/the internet) and nurturing communities of practice, those networks of knowledgeable people dispersed throughout the enterprise but who come together (often virtually through online systems) to collaborate for specific purposes. It is therefore no surprise that the most effective KM initiatives address both these strands (Figure 1).
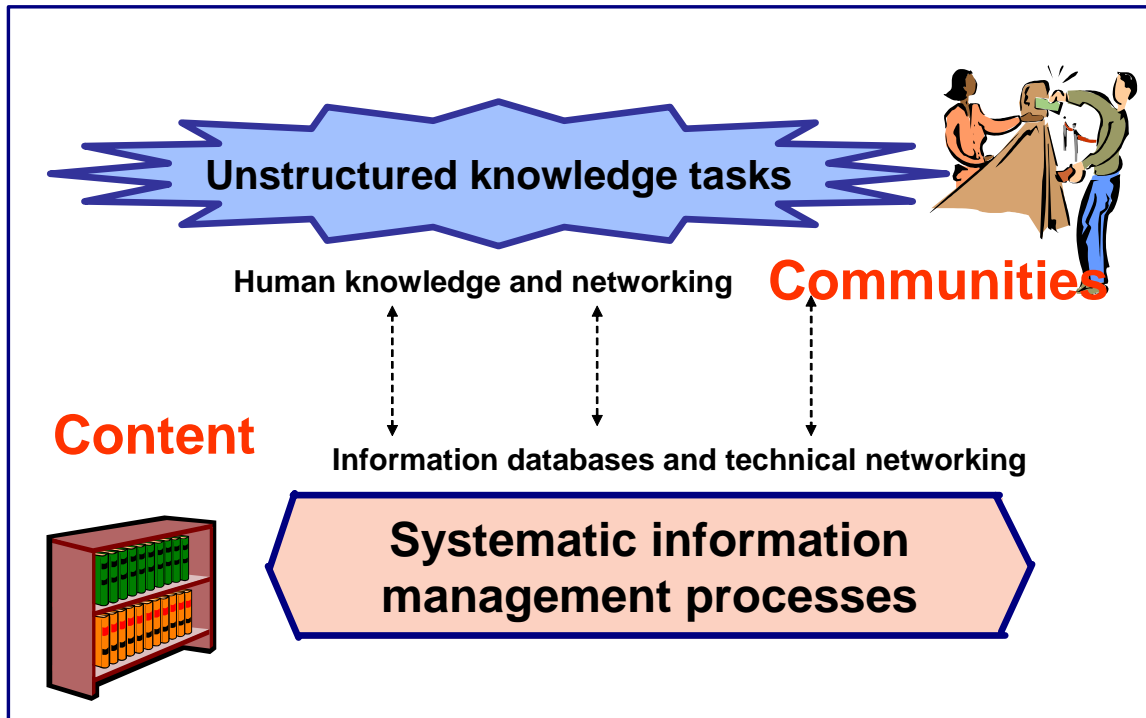

Figure 1 – The essence of knowledge management

The first strand is epitomised by the evolution of intranets (often with hundreds of disparate internal websites within an organisation) into enterprise-portals which are built using content management systems, whose claim to fame is the adage (though not necessarily the reality) "store once, use many times". The second strand tries to add some degree of formality and structure to the informal knowledge networks that already exist, as well as expanding their reach and influence. Doing this without destroying the very social structures that make them work is a difficult balancing act.

The current situation of the state of knowledge management can be summarised as follows:

- KM is well beyond the 'fad' stage – from surveys in 1997-8 that showed that two thirds of senior manager regarded knowledge management as a fad, today it is recognised as fundamental and a contributor of value. It does add value to an organisation's bottom line, and though difficult to prove directly, new measuring instruments have helped stakeholders identify the sources of value more clearly (see, for example, Andriessen 2004).

- KM with everything – as KM becomes more pervasive, a knowledge 'lens' and KM perspective are being applied to wide range of management and business processes. Total quality management, customer relationship management and risk management are examples of where such approaches have given stakeholders new insights and methods improved through the fusion of existing methods with good KM practice.

- Many good examples and case studies – there are now literally hundreds of reported cases of how KM has been introduced, the benefits it has delivered, and – most importantly – the lessons that have been learned along the way.

- More holistic, human-centred approaches – analysis of success factors show that a balanced approach is needed that covers business strategy, people and organisational structures and culture, business processes, explicit and tacit knowledge and technology. Most importantly, to redress the undue emphasis in some quarters of regarding technology as the 'silver bullet', a human-centred approach is often prevalent.

- Constantly improving tools and techniques – continual advances in technology have enhanced tools for individuals, such as mind-mapping and web page publishing, and for all stages of the corporate information life cycle, including taxonomy development, auto-classification and clustered search. Manual techniques have also improved and been embedded into structured methods. After Action Reviews, Knowledge Cafés and KM assessments are just three examples.

- A thriving research community – KM was very much a practitioner led discipline and only belatedly has the academic community caught up. However, there are now several business schools (notably in Scandinavia) with active programmes of research, ranging from large-scale surveys to case studies to longitudinal studies. We are constantly learning more about knowledge management in different contexts.

- Growing professionalism – allied to the above is the teaching of knowledge management as a discipline that embraces elements of strategic management, behavioural science, information management, economics and philosophy. There are professional organisations, such as KMPro, dedicated to increasing professionalism and running accredited courses. There are also plans to develop nationally and internationally recognised standards through bodies such as ANSI, BSI, CEN (Europe) and Standards Australia.

Information Management – The Underrated Stepchild?

The focus of the first of the two stands of knowledge management is of course information management. However, just as some people confuse the broader concept of knowledge management (covering tacit knowledge as well) with information management, so some people confuse information management with information systems. Aslib's KIMNET (Knowledge and Information Management Network), formerly the IRM Network, clarified the distinctions as the result of a definitions task force (KIMNET 1997). The former is to do with management activities concerning information while the latter are computer systems that manipulate information. In particular the task force separately defined IRM, information resources management, as the management processes concerned with the identification, ownership, cost and value, development and exploitation of an organisation's information resources. Associated with IRM are a set of tools and practices – such as an information audit – that underpin this approach.

In practice, though, many KM initiatives have failed to embrace the structured and logical approaches of information and information resources management as part of their armoury. It never ceases to amaze me how many corporate KM teams and steering groups do not have representation by librarians or information scientists. Information managers are also often not heard at board level, the very people who have sanctioned investment in knowledge management. To some extent this oversight is changing as developers of information portals recognise the need to improve information architectures and start to deploy taxonomies as part of their technological solutions. However, here again, there is often a tendency to first go to the enterprise modellers and systems architects within the IS department, ahead of information scientists. This lack of strategic impact is one of the key challenges facing information managers, and one we return to below.

KM Challenges in a Changing World

As a result of research and analysis into the state and prospects for knowledge management, a number of core themes that will determine the future of KM have been identified (Skyrme 2004). Over half of these directly impact information management and are covered below, together with an assessment of implications for IM professionals. The others concerned KM with everything, tapping tacit knowledge, communities of practice and corporate governance.

Strategic Integration

KM is a side-show until it is fully integrated into the strategic planning and decision processes of an organisation. This means explicit recognition of information and knowledge, and IM and KM in the corporate strategy and a clear articulation of its contribution to the business bottom line (including non-financial objectives). Companies like Quaker Chemicals recognise the importance of knowledge from their mission statement right through to their business plans and processes. The leverage of information and knowledge needs to be clearly understood. How does customer knowledge help improve customer service and feed-back into improved products? How do project and best practice databases reduce duplication and minimise risks? How does efficient access to latest research and market information reduce the time-to-market for new products? These and similar questions need to be addressed and answered, quantitatively if possible, but at the least with good anecdotal stories from respected managers.

Information professionals must consistently connect to corporate 'hot buttons', and understand how their output is used to support business objectives and priorities. Simply serving people who make request information from you is insufficient. It may even be irrelevant, if there is no clear link to a business outcome. Ignore the strategic thrusts of your organisation and you could find yourself outside it!
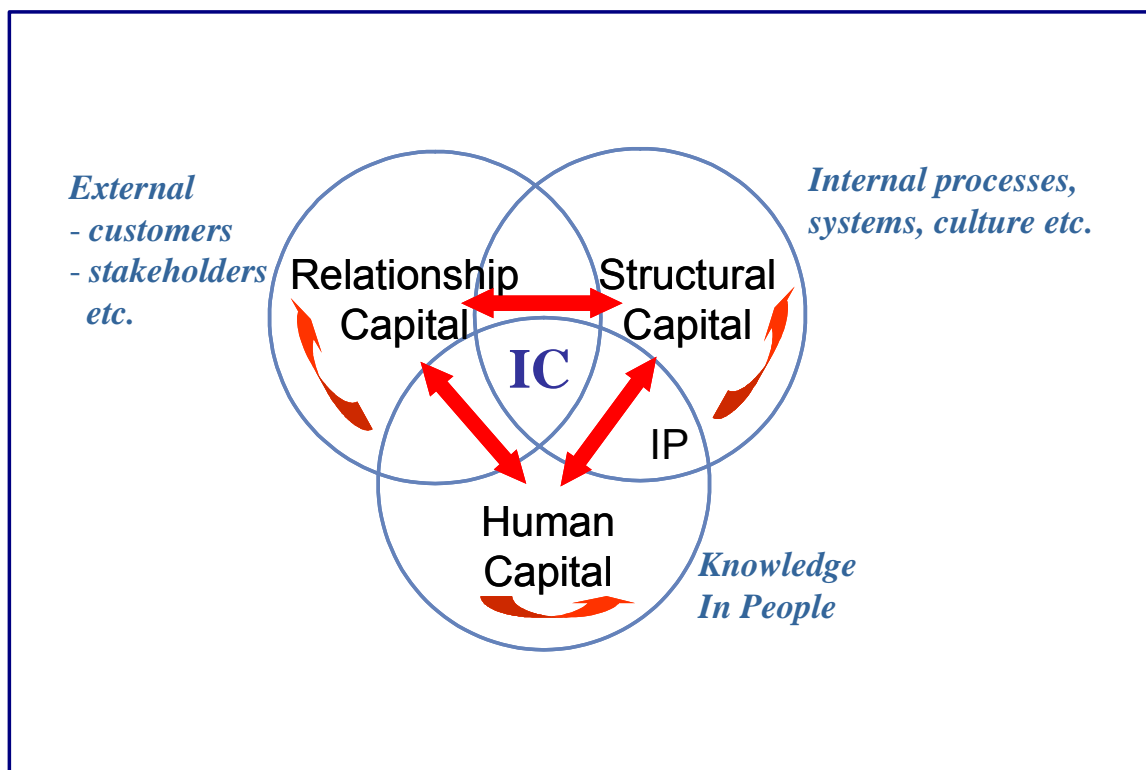

Figure 2 – Components of intellectual capital for which measures are developed

Meaningful Measures

Closely related to the first challenge is that of measurement. This has two aspects, the measurement of intellectual capital and the assessment of IM/KM performance. Regarding the first aspect, there have been significant developments in IC measurement theory over the last few years. Typically, intellectual capital includes human capital, relationship (including customer) capital and structural capital. Also, sometimes treated separately is intellectual property (patents, trademarks, copyrights etc.). It is the structural capital ("that which is left when people go home at night") that includes the information assets of a company. If you have done an information audit you will know not only what information assets you have and where they are, but how they are used and the benefits users ascribe to them.

Most IC systems do not purport to develop absolute measures of value. After all, the value of information only becomes easily calculable either when it is sold or when it has to be replaced because of loss. Rather, indicators that represent inputs, processes and outputs are developed that

can be tracked on year-on-year basis. These might include the number of sources available (an input measure), the percentage of requests dealt with within 24 hours (a process measure), and the cost savings from avoiding duplication because of available information (an output measure). Also important in IC models are the relationships between the different elements and how value is created as one form of IC is converted to another (Figure 2).

The second aspect is an assessment by key stakeholders of the performance of IM/KM activities. A structured questionnaire covers such activities as quality of information gathering and classification, efficiency of knowledge capture, integration with business processes, and awareness of services and so on.

As with any other function or profession, information managers who do not measure their own effectiveness and their wider organisational impact are "not scoring, only practicing".

Knowledge Work and Knowledge Workers

In the quest for organisational effectiveness, what has been somewhat overlooked is the effectiveness of individuals. After all, what is an organisation if it is not the sum total of the individuals within it? In addition, many KM initiatives fail because they do not to address the fundamental question: "what's in it for me?" This has led to several researchers re-visiting the fundamentals of knowledge work and knowledge workers (see for example Bhatt 2002, Davenport 2002 and Schulze 2002). They conclude that it is important to segment knowledge work into different categories, and also prioritise their importance, in order to assess what kind of knowledge initiatives have the most impact. A typical way of segmenting in shown in Figure 3, together with some approaches and methods (in italics) that are appropriate for each segment.
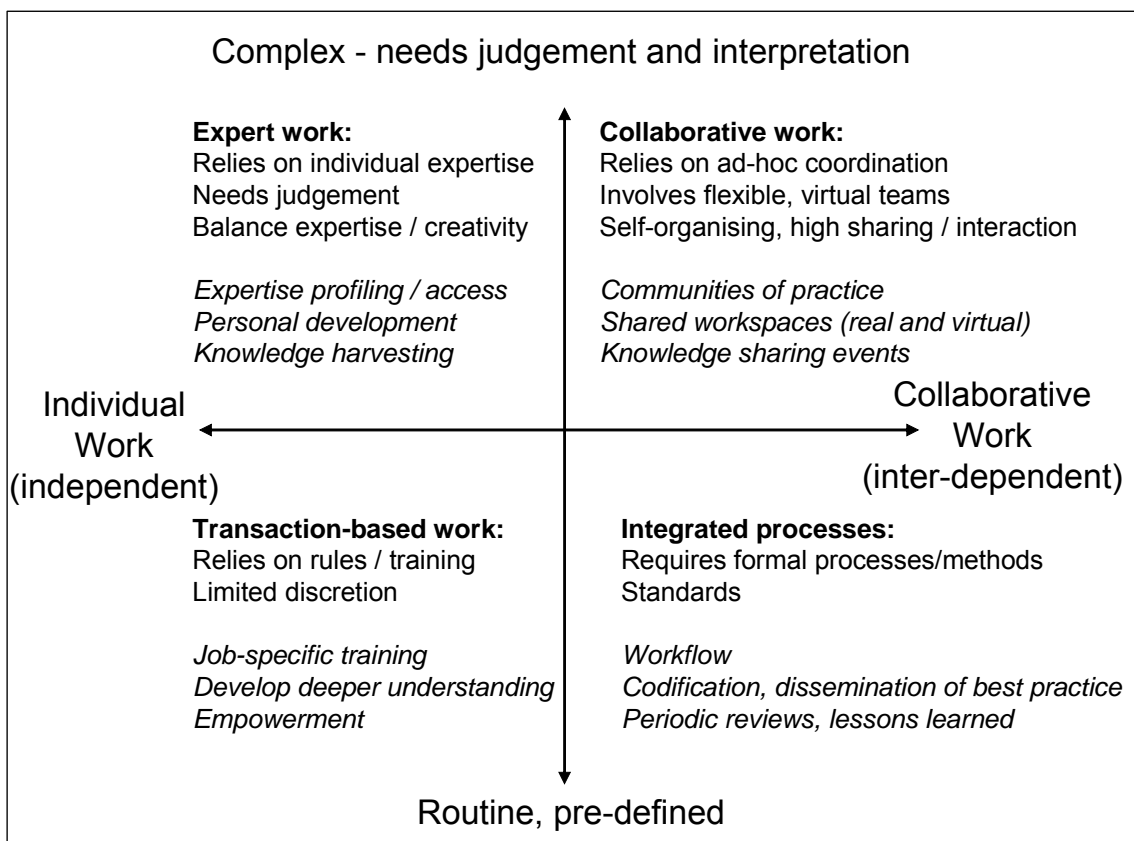
Complex - needs judgement and interpretation

Expert work:
Relies on individual expertise
Needs judgement
Balance expertise / creativity

Expertise profiling / access
Personal development
Knowledge harvesting

Collaborative work:
Relies on ad-hoc coordination
Involves flexible, virtual teams
Self-organising, high sharing / interaction

Communities of practice
Shared workspaces (real and virtual)
Knowledge sharing events

Individual Work (independent) ←→ Collaborative Work (inter-dependent)

Transaction-based work:
Relies on rules / training
Limited discretion

Job-specific training
Develop deeper understanding
Empowerment

Integrated processes:
Requires formal processes/methods
Standards

Workflow
Codification, dissemination of best practice
Periodic reviews, lessons learned

Routine, pre-defined

Figure 4 – A typical segmentation of knowledge work

The implications of this segmentation are that providers of services, including internal information services, need to tailor their offerings to different types of work and worker. The day of "one size fits all" is over.

Personal Knowledge Management (PKM)

A further corollary of the differences in knowledge work is that tools and information flows must be personalised to individual needs. Not only are individuals carrying out different types of task, but they also have individual work styles and preferences. While some like to absorb information by reading quietly to themselves, others prefer to talk to their peers. The latest generation of portal products do allow a high degree of personalisation, both in screen layouts and in how information is presented to the user. Search facilities can also personalise results to individual profiles, their pattern of usage, or even to what their peers in their community are accessing. As well as providing individuals with the appropriate tools to do their job, PKM also addresses personal development issues, reward and recognition. When PKM tools are embedded into people's daily work routine, the codification and sharing of knowledge takes place much more painlessly, without the conscious effort "to update the knowledge base".

Unless you want to leave it to individuals to flounder in a deluge of information, information managers have a key role in helping the user navigate their information universe. One way is to help them think clearly about their information needs and how they would like to access information. This may involve training and coaching on how to get the best out of their information sources and information management tools. Information managers should also have a strong input into the planning and implementation of major new information systems, such as portals.

Know-Who

Much of an organisation's most important knowledge resides in its people. It's not surprising, therefore, that an early project in many KM initiatives was the development of a skills database or a 'Yellow Pages', so called because it is organised not as an alphabetical list of people's names, but as an alphabetical or hierarchical list of skills, thus allowing individuals to find out who is knowledgeable about a particular subject and tap into their expertise. Today's technology automates to some extent the process of expertise profiling and connecting users to that expertise. A search into an enterprise portal with expertise finding functions will not only bring back a list of documents (or Web pages) but a list of experts, inferred from their contributions, such as documents or emails they have written. More sophisticated systems allow user feedback and ratings, such as is found on popular consumer websites, like Amazon. Another technique which is having resurgence is that of social network analysis. This shows a map of connections, of who communicates with whom to gather and impart knowledge.

Most information managers have extensive external networks that they tap into when they are posed a tricky question. They now have tools that can let them tap into expertise within their organisations. If they do not actively participate in the design and use of these tools, then users may feel that they do not need their help.

Knowledge as a Business

If knowledge and information are important resources, then why not commercialise them and sell them externally for revenue generation? That's what several service organisations have successfully done. Best Practices LLC, a consultancy in North Carolina, now makes more money by selling information (best practice guides and case studies) online over the internet than it does through its conventional consulting business. In almost any business, information that is collected as a by-product can be repackaged and sold as valuable market information to other organisations, subject to necessary personal data protection safeguards.

As an information manager, if you have got a good overview of your information assets, as you will have if you have addressed the first two challenges mentioned earlier, you can consider how exploitable they are in the external market. There may well be objections from internal managers that "such information is proprietary and strategic and must not be given to competitors". However, companies like Pilkington and IBM generate a significant proportion of their revenues by licensing out their know-how and patents, even to competitors.

Taming Technology

The most significant developments in the last few years of knowledge management have been in the field of technology. Today, we tend to overlook the fact that the internet is barely a decade old. Records, content and document management systems have evolved by leaps and bounds. Few of us could survive without email, despite all the recently exacerbated problems of spamming and viruses. The consequence of all this technology is that we have ready access to information. Unfortunately we are deluged with it: "drowned in data but starved for knowledge". And the technology that has delivered it all sometimes seems to struggle to filter and sort it to match users' needs. In a survey conducted by the Delphi Group (2004), 60% of respondents said that information retrieval is time consuming and difficult, and that the results are often unsatisfactory.

The most significant tools from the information management perspective are those that support a taxonomic approach throughout the information life cycle. There are, of course, tools, such as Multites, TermTree 2000 and Thesaurus Master that support taxonomy and thesaurus management. However, most enterprise information suites, such as Verity and Convera either have built-in taxonomic functions or can be tightly integrated with specialised products for specific parts of the cycle, viz.:

- Categorisation – the development of categories based on pre-existing taxonomies and/or representative samples of documents reflecting each category;
- Classification – each document or content source is then classified into relevant categories either by application of rules or by content analysis. The content (or its index) is then 'tagged' it with appropriate category metadata;
- Search – compared to traditional search, the results can be filtered, clustered by category or presented in a hierarchical view.

Automated categorisation and classification generally use one of two broad classes of content analysis algorithm. These are either statistical, in which word frequencies, combinations and patterns are analysed, or natural language, which draws on a dictionary of meanings (a semantic network) for its linguistic processing. Examples of niche products that excel in automated categorisation and classification include Entrieva's Semio and Stratify's Discovery System. In the field of search, Vivisimo is an example of a search engine that clusters results, while Endeca's ProFind offers a good example of the emerging technique of 'guided navigation'.

For several years there have been futile arguments as to whether human or automated processes were best. Whereas computers can speedily process high volumes, humans are generally credited with more understanding and accuracy, though even here, automated solutions often find concepts and relationships that humans overlook. It is now generally accepted that human-augmented approaches are best since they combine the best of both worlds. Where the computer is confident of its classification it does so automatically. Where it is less certain it uses workflow to route it to relevant expert for verification.

The implications for information managers are enormous. Are you needed in the loop at all? After all, end-users now do their own information searching which used to be one of your core tasks. So why not simply leave the front-end, the categorisation and classification of content, to technology and subject matter experts? In other words, do we need you at all?

The Future Role of Information Managers

In the previous section we have discussed developments and trends in knowledge management. At first glance these key themes show that information managers face some formidable challenges if they are to remain relevant to organisations in the 21st century. Failure to address them will lead to a very bleak future. We conclude our analysis with four different scenarios as to how their role might unfold.

Automated out of Existence

As already noted, technology is proving increasingly capable of carrying out tasks that were previously carried out by information specialists. It might not always be perfect, but in this fast changing era, end-users are often happy to make do with less than perfect information, but which is easily accessible and delivered to them when they need it. The computer churns out some relevant information on demand, so how are they to know you could do anything better?

In this scenario, the information manager goes the way of the traffic policeman directing traffic at cross-roads. They were replaced by traffic lights and are only called upon to fulfil that function when the technology fails. Alternatively they inhabit less well developed countries where these quaint traditions continue.

Knowledge Managers Rule the Roost

In many companies, knowledge managers have taken the strategic high ground and have more visibility at board level. Their remit also covers all forms of knowledge, not just information. They relate knowledge management to other change initiatives and are pro-active communicators of the value of information and knowledge. Furthermore, many of them have been successful at securing reasonably high levels of funding, some of it by jumping onto the technology bandwagon. Although a few have an information management background, many have come from other disciplines, including marketing, finance, business development and general management.

In this scenario the information manager is at best a bit player. He or she only comes to prominence when new regulations or legislation, such as the Freedom of Information Act, forces top management to be more actively concerned about their information assets.

Specialist Outsourcing

In this slightly more optimistic scenario, information management is recognised as a specialist skill. However, just as many information systems operations have been outsourced, so too is information management. Companies that specialise in the provision of information deal with information management problems day in and day out, so have in-depth experience of them. An example is Factiva, who as well as providing information feeds into organisations, can now also offer advice on developing taxonomies. What may be a non-core activity to your company – information management – is the core business of a specialist information management company. They live and die by how well they serve their customers' needs.

In this scenario, information managers migrate from end-user organisations to IM service providers. This gives them the advantage on working in a wider range of contexts on a variety of projects. Furthermore, rather than being isolated individuals or in small teams, they have ready access to a much large peer group.

The Dependable Lynch-pin

Since good information management underpins good knowledge management, the contribution of information management is duly recognised and the KM team ensures that it maintains good IM capabilities. There will, of course, be shifts, often extrapolations of what has already happened. The physical library becomes more virtual, while information managers spend more of their time helping end-users develop a modicum of IM skills so they can help themselves. By doing a good job on the explicit knowledge, it frees up knowledge managers to concentrate on some of the more intractable problems of managing tacit knowledge.

The Bottom Line

Only in the last scenario is there a semblance of "business as usual". In the first scenario, information managers disappear. In the second scenario, the information managers who survive will be those willing to learn social and management skills and capable of adapting to the new imperatives. They are unlikely to be called information managers. In the third scenario, you are probably based in Bangalore.

Which scenario will unfold? Usually, things do not pan out as either-or, but as elements of all possibilities. The information managers who thrive will be conscious of the implications of each and broaden their skills to adapt to the necessary changes. For example, even if technology takes over many of their functions, someone has to specify the requirements, select options and test the results against vendor promises. If knowledge management takes and maintains the high ground, then there are techniques that are logical extensions of what information managers already do. And if you supplement your information management skills with general management and change management skills, you too can become a Chief Knowledge Officer, or at least a knowledge manager. If your job is outsourced and you don't want to move, then you could do no worse than to adapt the first and

second challenges from an organisational perspective to an individual level. Articulate your personal value-added, measure and report on your personal intellectual capital. Use these as a basis to identify where your transferable knowledge and skills have most leverage (and value).

Conclusion

This paper has presented the highlights of an analysis of the state of knowledge management, its trends and some key challenges that organisations face. Four potential scenarios for the future of information managers have also been outlined. They are not the only possibilities, but they provide a starting point for readers to think about and develop their own vision of the future. Taken together and developing these ideas will provide information professionals and managers the context in which they can plan their own future.

In my previous presentation at this conference, I posed the question: "from information management to information management: are you prepared?" (Skyrme 1997). The indications from what has happened since then is that many of you were not prepared, and did not follow several of the steps to preparedness that were suggested, viz.:

- Articulate the value added that good information management can bring to your organisation and its contribution to the bottom line.

- Develop closer partnerships with the knowledge champions in your organisation. They need your skills and you might benefit from their current popularity among senior management!

- Help the users help themselves. Show them how to make more effective use of the only information resources at their disposal, including the internet/intranet (today this would be the enterprise portal)

- Seek out best practice, wherever it is. Benchmark your activities against a comparable activity externally.

These suggestions are as valid today as they were then. In addition, since today's pressures are even greater, it is even more important to gain clarity about your role and your personal capabilities that add value to your organisation and your marketability. The future is challenging, but in the words of John Galsworthy: "If you do not think about the future, you cannot have one".

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