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**Efficiency Unit**

**Making Informed Decisions**

January 2010

# EFFICIENCY UNIT
# VISION AND MISSION

## Vision Statement

To be the preferred consulting partner for all government bureaux and departments and to advance the delivery of world-class public services to the people of Hong Kong.

## Mission Statement

To provide strategic and implementable solutions to all our clients as they seek to deliver people-based government services. We do this by combining our extensive understanding of policies, our specialised knowledge and our broad contacts and linkages throughout the Government and the private sector. In doing this, we join our clients in contributing to the advancement of the community while also providing a fulfilling career for all members of our team.

This brief was researched and authored by the Research Division, Institute of Public Administration, Ireland (www.ipa.ie/research). The Research Division provides applied research services for policy makers in a wide range of public service organisations, drawing on an extensive network of contacts and experience gained over more than thirty years.

## Other Efficiency Unit Documents

The Efficiency Unit has produced a number of guides on good practice on a wide range of areas, including outsourcing and contract management. These may be found on the Efficiency Unit website at www.eu.gov.hk.

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# Foreword

The public service can be a hostile environment for decision making. We are held to account by colleagues, superiors, legislators, media and the public for every decision we make. We know that many of our decisions will affect many people over many years. We know that there is much that we don't know. But decisions must be made.

This report does not have the solutions to all the problems that decision makers face, but it does introduce ideas and techniques that can help improve access to useful information that can give greater confidence in making and explaining decisions. Much of the information that decision makers need does exist. Too often it is not known that it exists. Too often it cannot be made available in a timely manner to those who need it in a format that is capable of meaningful analysis.

This report provides a succinct summary of the key issues involved in managing knowledge and using it well. It provides some recent, practical examples from real experience elsewhere that may be helpful to your thinking about how to improve knowledge management and use in your organisation.

As well as preparing this survey of international best practice, the Efficiency Unit is now developing an Enterprise Information Management System (EIMS) for its internal work. Through this project we are learning lessons that will help us to assist you in benefiting from these systems as they are introduced across the public service to improve access to relevant, reliable information and help you in your decision making. We look forward to sharing our experience from that project with you in due course. In the interim, we welcome any questions that you may have after consideration of this report.

Head, Efficiency Unit
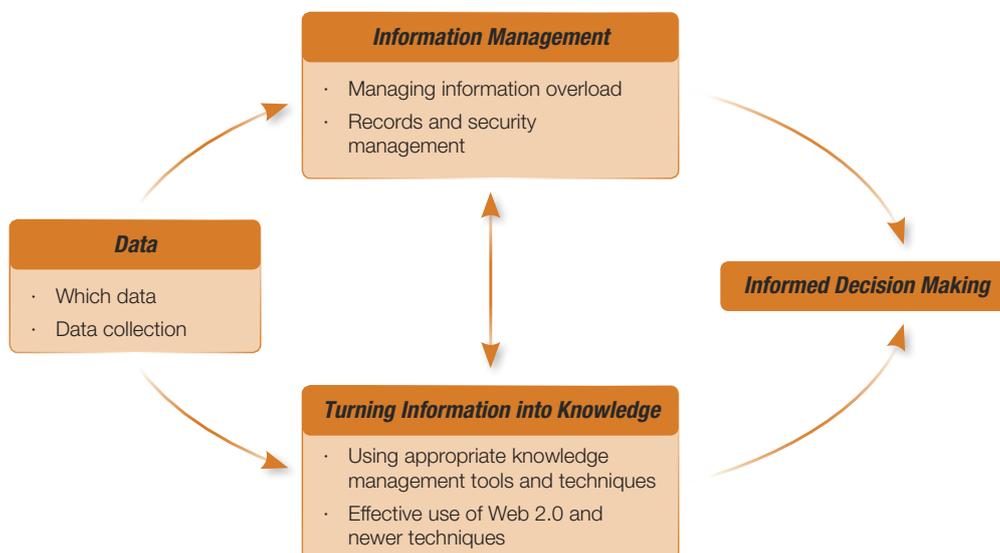January 2010

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# Executive Summary

## Information and knowledge: a broader understanding

- The implications of managing information and knowledge effectively are far reaching. Put simply, good information supports better decision making and therefore better delivery of services and better value for citizens.

- Decision making is at the core of all business activity, as executives set strategy and manage operations by weighing a vast array of factors to arrive at the desired balance of risk and reward. It is a cause of alarm that executives themselves feel that the quality of decision making in their organisations is at best mixed, primarily due to the quality of information available to them.

- There is an onus on government employees to ensure that the information brought to bear on decision making is as relevant, complete, accurate and timely as possible.

- Never before has so much information been so readily available to organisations and their employees. However, what for some is an information rich age, others might call information overload. Information overload emerges where an excess amount of information is provided, making processing and absorbing tasks very difficult for the individual.

- Current research suggests that the surging volume of available information – and its interruption of people's work – can affect not only personal well-being but also decision making, innovation and productivity. In one study, for example, people took an average of nearly 25 minutes to return to a work task after an e-mail interruption.

- Information and knowledge management, which support better decision making, should be a major area of concern for governments. It is not a new problem, but the scale has never been so vast.

- Knowledge management is about building organisation intelligence by enabling people to improve the way they work in capturing, sharing and using knowledge.

- Business intelligence is a set of technologies and processes that use data to understand and analyse business performance.

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## From data to better decision making



**Information Management**
- Managing information overload
- Records and security management

**Data**
- Which data
- Data collection

**Turning Information into Knowledge**
- Using appropriate knowledge management tools and techniques
- Effective use of Web 2.0 and newer techniques

**Informed Decision Making**

## Implementing knowledge management to enhance decision making

- There are two main connected aspects to using knowledge management to enhance decision making. One concerns how information and knowledge are captured and shared, the use of appropriate tools and techniques and the impact of Web 2.0. The other concerns handling the volume of data generated, including such issues as managing information overload, records and security management.

- Organisations must be in a position to capture new knowledge in order to continuously improve and adapt to ongoing change. There are a wide array of tools and techniques for enhancing organisation knowledge, thereby aiding better decision making. Some of the best know techniques are After Action Reviews and Communities of Practice.

- Records are essential elements of good government. They help assure the accountability of government over time and provide a sound basis for historical research. By extending knowledge of past actions and decisions to inform future decision making, they provide a valuable repository of information for future administrations and help build trust.

- Where records are perceived to be of value, they need to be captured, managed and safeguarded in an organised manner. Records that relate to high-risk areas of business require most attention as they need to be kept to provide evidence, to support actions and to ensure accountability.

- Web 2.0 is the term used to describe the emergence of greater user-functionality on the internet. Where Web 1.0 involved only one way 'push' communication, Web 2.0 software such as blogs, wikis and social networking sites have enabled anyone to interact and publish online.

- A potential strength of Web 2.0 tools with regard to decision making is their capacity for collaboration on the development of innovative products and services. In addition to communicating with one another, many users also contribute to the collective development of products and services. By 'crowdsourcing' (as opposed to 'outsourcing') some businesses are harnessing external expertise by engaging directly with and rewarding participation from their customers, users and a wide pool of informed contributors.

- For governments the particular characteristics and popularity of Web 2.0 tools require attention. Increasingly organisations will have to engage citizens in places where they already are (in social network sites and online communities) rather than create portals and all-purpose websites, expecting citizens to come to them.

## Making the change

- There is research evidence that the effective use of information and knowledge can improve decision making and be developed into a transforming capability for organisations. However, in order to extract maximum value from the information and knowledge held by an organisation, there is a need for a structured approach, most likely supported by a number of tools and techniques.

- The right technology is only one of four critical enablers of effective knowledge management. Apart from technology, they are cultural factors, leadership factors, and measurement and evaluation factors. It is in addressing these four factors together that effective change to making informed decisions can be made:

*Technological factors* A key point when approaching knowledge management is that technology is helpful, but it is not the driver of change. Developing databases of good practices on their own rarely achieve the impact hoped for. Staff will rarely take the time to enter a practice into a database unless it is specifically part of their job.
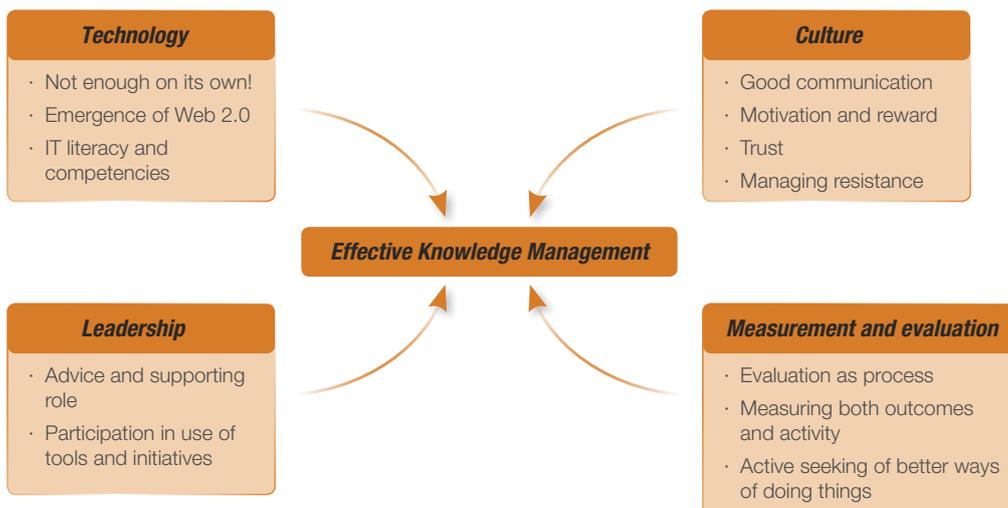
*Cultural factors* An organisation's culture in which people are motivated, supported and rewarded for sharing information, is a basic prerequisite. This is the most important factor related to sharing and transfer of knowledge. For organisations seeking to develop knowledge management it is important to recognise that in all but exceptional circumstances some level of resistance to change will surface. Employees will need to be convinced that there are compelling reasons for change; that staying in the current situation is jeopardising the organisation, and that the new situation will bring enough benefits that it is worth the journey. In this regard, good communication is fundamental.

*Leadership factors* As with most change projects, it's not essential that leaders initially endorse knowledge management, only that they don't quash initiatives. Indeed in some organisations quite a low-key start up has been useful. However, eventually, if a new approach to knowledge management is to blossom across the organisation, management has

to take an active, supportive role. In practical terms this may require that the leadership itself is convinced that knowledge sharing has real merit and impact. In addition, managers may have to overcome fears which they themselves have in relation to new technology and sharing knowledge.

*Measurement and evaluation* There are two types of measurement issues involved in knowledge management, 1) measuring performance to identify best practice and 2) measuring the impact of initiatives designed to aid the transfer of knowledge. There are challenges in both areas, but both are necessary. The objective within an organisation should be on creating a culture of learning from evaluation, where managers and staff are constantly raising questions about what they are doing, and actively searching for ways of doing things differently or better. In this way, evaluation can help make the promise of knowledge management real.

## The Four enablers of effective knowledge management

**Technology**
· Not enough on its own!
· Emergence of Web 2.0
· IT literacy and competencies

**Culture**
· Good communication
· Motivation and reward
· Trust
· Managing resistance

**Effective Knowledge Management**

**Leadership**
· Advice and supporting role
· Participation in use of tools and initiatives

**Measurement and evaluation**
· Evaluation as process
· Measuring both outcomes and activity
· Active seeking of better ways of doing things

# 1 Information and knowledge: a broader understanding

## Drowning in data?

With each advance in our ability to reproduce and store information, the amount of information available has increased exponentially. The internet gives people access to an unprecedented amount of data. Writers have talked of a 'tsunami of data' (Wurman, 1997), and of people suffering from information overload and anxiety because of the sheer volume and the unstructured, chaotic storage of this data.

How we collate, store, process and use information should be a major area of concern for governments. It is not a new problem, but the scale has never been so vast. Furthermore, the implications of managing information and knowledge effectively are far-reaching. Put simply, good information supports better decision making and therefore better delivery of services and better value for citizens. There is an onus on public servants to ensure that the information brought to bear on decision making is as relevant, complete, accurate and timely as possible.

## Information and knowledge management – some definitions

Knowledge management (KM) is about building organisational intelligence by enabling people to improve the way they work in capturing, sharing and using knowledge. It involves using the ideas and experience of employees, customers and suppliers to improve the organisation's performance. Building on what works well leads to better strategy, practice and decision making (Improvement and Development Agency for Local Government (IDeA), 2009).

The definition above emphasises a number of key considerations:

- The objectives of KM are to make organisations more efficient and effective; to support them in achieving their business objectives; and, to make informed decisions.

- Using and sharing knowledge is fundamental to the concept of KM. Some organisations prefer the more accessible term knowledge sharing to KM, which they regard as having become overly identified with information management and technology.

- The idea of tacit (as opposed to explicit) knowledge is central to the concept of KM and has been used to describe the skills, experiences, insight, intuition and judgment held by individuals. Examples range from riding a bicycle to the way a project manager interacts and communicates during a problem solving exercise. In other words, it has to do with an individual's aptitude for doing things or even cognitively thinking about things. This type of knowledge is difficult, some would say impossible, to capture and represent in explicit form.

The distinction between information and knowledge and, to a lesser extent, data is widely debated. Davenport and Prusak (1998) explain the differences through the following definitions:

- Data is: the raw material that underpins information, for example facts, observations, statistics.

- Information is: data with some context or meaning attached.

- Knowledge is: the condition of knowing something gained through experience or of apprehending truth or fact through reasoning.

The authors further note that while distinctive, in practice, the three areas may be difficult to separate. In effect what may emerge is a continuum of the three, or an evolutionary process. Kennerley and Mason (2009) support this thinking, referring to a process whereby data is given context and meaning and thus converted into information, which in turn, when combined with the experience and skills of individuals, becomes knowledge with which to make decisions.

A further area of considerable debate is the distinction between KM and information management (IM). IDeA in the United Kingdom (UK) (2009) explains the differences between IM and KM. IM deals with the structuring, organising, classifying and control of information, whereas the challenge of KM is to determine what information within an organisation qualifies as 'valuable'. All information is not knowledge and all knowledge is not valuable. The ultimate goal of IM is to ensure that information is stored and retrievable, while the purpose of KM is tied more closely to organisation objectives, for example to facilitate product innovation or generate cost savings.

Other writers while often noting the complexities involved in managing knowledge, in particular tacit knowledge, know-how and experience, still emphasise the importance to organisations at every level of seeking to promote knowledge capture and dissemination. According to Chris Collison, author of the popular knowledge management book 'Learning to Fly' http://www.learning-to-fly.org.

*'It's an oxymoron. It's like herding cats. You can't manage it, I can't manage it. What we can do though, is manage the environment in which learning really happens, knowledge is captured, distilled, shared – and most importantly of all, applied. Making a difference, improving the outcome'.*

A very comprehensive glossary of KM terms can be found on the website of the UK National Health Service (NHS) at http://www.library.nhs.uk/knowledgemanagement/Page.aspx?pagename=GLOSSARY

Business intelligence (BI) describes a set of technologies and processes that use data to understand and analyse business performance (Davenport and Jarvenpaa, 2009).

## Knowledge management, what's in a name?

As a means of exploring whether KM represents 'the salvation of business' or the 'emperor's new clothes', Bouthillier and Shearer (2002) conducted empirical research in a range of public and private sector organisations to explore why and how

organisations are practicing the management of knowledge. The organisations studied included Hewlett Packard, Health Canada, the United States (US) army and the World Health Organisation.

Data published by the various organisations were compared and analysed under the headings:

- Stated goals and objectives
- Types of knowledge being managed
- Sources and the consumers of knowledge
- Knowledge processes involved
- Methodologies employed
- Technology used.

The authors conclude that despite the vagueness of KM, and its potential overlaps with IM, it is practiced in many organisations, where it is made up of various organisational practices requiring changes in policies, work routines and organisational structures. They found that:

- Knowledge in practice is most often defined as tacit knowledge.
- KM, as it is practiced, really means the sharing of tacit knowledge.
- There are slight differences between private and public sector KM. Private sector organisations use KM for internal knowledge sharing. Public sector organisations use KM for both internal and external knowledge sharing.
*Source: Bouthillier and Shearer (2002)*

BI essentially uses technology to access and monitor information, facilitating timely, informed decisions. BI dashboards – visual displays that provide up-to-date key performance indicator status reports – and scorecards are increasingly being used by public sector managers to track performance and budgets.

For the purpose of this report the concepts of IM and BI are incorporated in the term KM. While the differences between them are acknowledged (BI has a strong technology focus; IM may preclude tacit knowledge), they are used broadly synonymously. The focus in this report is on the management of the process by which data is converted into information and information into knowledge with which decisions can be made.

# Using Business Intelligence to make better decisions

The city of Richmond in the US has invested in BI. Recently, the police department added more granularities to its reports. Instead of grouping all violent crimes together, police now look independently at crimes such as robberies, rapes and homicides. This enables them to zero in on patterns relevant to a specific kind of crime. For example, the department discovered that the city's Hispanic workers were often robbed on paydays. By entering the workers' regular paydays into the system and looking at robbery patterns, the police were able to pinpoint the days and locations where these incidents were most likely to occur. Now, the force pre-emptively moves officers from other parts of the city into potential problem areas, which has lowered the number of robberies.

*Source:*
*http://www.govtech.com/gt/articles/575229?id=575229&full=1&story_pg=1 <http://www.gov-tech.com/gt/articles/575229?id=575229&amp;full=1&amp;story_pg=1>*

## Why making informed decisions matters

Decision making is at the core of all business activity, as executives set strategy and manage operations by weighing a vast array of factors to arrive at the desired balance of risk and reward. The enormous growth in the amount of data is making this process increasingly complex. It is therefore a cause of alarm that executives themselves perceive the quality of decision making in their organisations as mixed at best.

According to a survey carried out by the Economist Intelligence Unit (EIU) (2007), 61% of executives report management decision making in their companies as moderately efficient or worse, with one in five believing that management frequently gets its decisions wrong. The EIU report identifies five ingredients of good decision making, all of which are directly or indirectly associated with better KM:

*1. High quality data* This is a prerequisite for consistently sound decision making. The greater your understanding of your organisation and your environment, the more you can move from guesswork to making strategic choices.

*2. Employees need access to good technology and training* Access to advanced information systems is crucial to improved decision making, as is training to help employees make full use of them. Such tools must also be easy to use. There is no point in spending on new technology if people do not use them.

*3. Sound judgment* Decision making processes, whether formal or not, need to leverage the strength of human intuition. Data does not run companies; people do.

*4. Trust* To gain employees' confidence in management decisions, establishing transparency and trust is at least as essential as a good track record.

*5. Flexibility* Approaches to decision making, and even the use of data, need to reflect the fact that the world is a diverse place, and one size does not always fit all.

# How better use of information led to better decision making

In London, the numbers of young people not in education, employment or training (NEET) between 2004 and 2007 were almost all in excess of the national average. A study produced for the Children and Young People's Unit at the Greater London Authority identified several approaches to improving the information used to 'profile, monitor, review and understand the circumstances of young people NEET or at risk of becoming NEET'. These included reviewing attendance, behaviour and attainment data, monitoring information on 'at risk' pupils, and reporting the contribution of local schools to NEET numbers. The report found that these measures had 'made a tangible difference to the targeting of school support towards young people who may be at risk of NEET status', and the resulting development of tailored support packages for young people 'at risk' had contributed to a notable decline in the number of young people who were NEET in London.

*Source: The Audit Commission, 2008*

In an extensive study of information practices in local authorities in the UK, the Audit Commission (2008 and 2009) found a high level of awareness of the importance of good information in supporting better decision making and therefore better delivery of services. However, according to the survey carried out as part of the research, two-thirds of councils say members struggle to understand the information they receive and half say that senior officers do. While in part this is due to lack of training, there are also significant issues in respect of the relevance, quality and presentation of information by public servants to senior management and elected council members with responsibility for making decisions.

The Audit Commission report (2008) concludes that, while the information available when a decision is made may never be as relevant, complete, accurate and timely as might be desired, it is also the case that those who make decisions are often ill-equipped to draw appropriate conclusions from whatever is available. On a more positive note, it is emphasised that these problems could be overcome without having to spend more, by good management and learning from exemplar councils.

It was recommended that councils should:

- Develop an environment where decision makers demand relevant, high quality, well presented information
- Ensure a robust, two-way dialogue between decision makers and information providers
- Invest time in recruiting, training and retaining skilled staff
- Foster a culture of professionalism in the research, intelligence and information functions.

The website of the Audit Commission includes a self assessment framework and toolkit designed to help organisations assess how well they are using information in their organisation. See: http://www.audit-commission.gov.uk/localgov/nationalstudies/istheresomething/pages/selfassessment_copy.aspx

## Checklist for managers of public services in using information to make better decisions

### Does my organisation have the relevant information it needs?

- How do we know that senior decision makers have the information they need? How do they judge what information is needed? Are we getting better or worse at providing it?
- Can we make decisions that affect local areas based on information about those areas?
- Do our papers for decisions contain a range of information, for example, on costs, trends, comparators, public opinion, as well as performance indicators and targets?
- Do we share data safely and productively within our organisation and with our partners?

### Is my organisation's information based on good quality data?

- For recent important decisions, how confident are we about the quality of the data underlying the information?
- How do we decide how accurate and timely information needs to be?

### Is my organisation's information well presented?

- Is information presented in a way that senior decision makers find easy to understand and interpret?
- How could we improve the presentation? Do senior decision makers provide helpful feedback to those presenting information?

### Does my organisation have sufficient skills?

- How skilled are senior decision makers at interpreting information? How could we help them improve?
- Do we have any skill shortages in analysing or presenting information? How are we addressing them?

### How far does my organisation evaluate its information?

- How often do we evaluate whether we have the right information and use it to best effect? What have we learned?

*Source: the UK Audit Commission, 2008, p.4*

## Drivers of knowledge management: information rich or information overload?

Never before has so much information been so readily available to organisations and their employees. However, what for some is an information rich age, others might call information overload. Information overload emerges where an excess amount of information is provided, making processing and absorbing tasks very difficult. According to a survey conducted by Xerox Corporation and Harris International among US government and education employees, over half the respondents experienced stress in finding the right information to do their jobs. One-third agreed that their organisations are drowning in paper, while a quarter acknowledged that, on occasion, they have used the wrong information. There are real challenges in identifying the right, accurate and timely information to support decision making.

Over the past decade internet use has risen exponentially, with more and more people conducting their own research and latterly, through the rise of interactive networking tools, producing as well as consuming data. Each day information workers are bombarded with, on average, 1.6 gigabytes of information in the form of emails, reports, blogs, text messages, calls and more (MarketWatch, 2009).

While information is possibly the world's most valuable commodity, a problem emerges when the volume of information an individual receives and or processes has more negative than positive consequences. Commentators talk of 'drowning in data, while thirsting for information' (Kennerley and Mason, 2008). In the US it has been estimated that firms sacrifice $900 billion a year in lost productivity, with the average knowledge worker spending about 25% of their day searching for needed information, getting back to work after an interruption and dealing with other information-overload effects (MarketWatch, 2009).

According to the Harvard Business Review (Hemp, 2009), the surging volume of available information - and its interruption of people's work - can affect not only personal well-being but also decision making, innovation and productivity. In one study, for example, people took an average of nearly 25 minutes to return to a work task after an email interruption. Intel managers have estimated that an average employee loses about eight hours a week of productivity to the interruptions associated with trying to keep up with the data stream and with stopping and starting activities because of data-driven interruptions.

# Struggling to evade the Email tsunami

Email has become the bane of some people's professional lives. Michael Arrington, the founder of TechCrunch, a blog covering new Internet companies, stared balefully at his inbox, with 2,433 unread email messages, not counting 721 messages awaiting his attention in Facebook. Mr. Arrington might be tempted to purge his inbox and start afresh — the phrase 'email bankruptcy' has been with us since at least 2002. But he declares email bankruptcy regularly, to no avail. New messages swiftly replace those that are deleted unread.

When Mr. Arrington wrote a post about the persistent problem of email overload and the opportunity for an entrepreneur to devise a solution, almost 200 comments were posted within two days. Some start-up companies were mentioned favourably, like ClearContext (sorts Outlook inbox messages by imputed importance), Xobni (offers a full communications history within Outlook for every sender, as well as very fast searching), Boxbe (restricts incoming email if the sender is not known), and RapidReader (displays email messages, a single word at a time, for accelerated reading speeds that can reach up to 950 words a minute).

While helpful, none of these services eliminates email overload because none helps us prepare replies. A recurring theme in many comments was that Mr. Arrington was blind to the simplest solution: a secretary. To Mr. Arrington, however, having assistants process his email is anathema. His blog, after all, is dedicated to covering some of the most technically innovative companies in existence. 'I can't believe how many commenters think the solution to the problem is human labour,' he wrote.

We all can learn from H. L. Mencken (1880-1956), the journalist, essayist and member of the Hundred Thousand Letters Club, who corresponded without an assistant. His letters were exceptional not only in quantity, but in quality: witty gems that the recipients treasured.

Marion Elizabeth Rodgers, the author of 'Mencken: The American Iconoclast' (Oxford, 2005), shared with me (via email) details of her subject's letter-writing habits. Whether the post brought 10 or 80 letters, Mencken read and answered them all the same day. He said, 'My mail is so large that if I let it accumulate for even a few days, it would swamp me.' Mencken also reminds us of the need to shield ourselves from incessant distractions during the day when individual messages arrive. The postal service used to pick up and deliver mail twice a day, which was frequent enough to permit Mencken to arrange to meet a friend on the same day that he extended the invitation. Yet it was not so frequent as to interrupt his work.

Today's advice from time-management specialists, to keep our email software off, except for twice-a-day checks, replicates the cadence of twice-a-day postal deliveries in Mencken's time. We can handle more email than we think we can, but should do so by attending to it only infrequently, at times of our own choosing.

*Sources: 'Struggling to Evade the Email Tsunami', New York Times, 20-4-2008*
*http://www.nytimes.com/2008/04/20/technology/20digi.html?_r=4&oref=slogin&pagewanted=print*
*See also: 'Lost in Email, Tech Firms Face Self-Made Beast', New York Times, 14-7-2008*
*http://www.nytimes.com/2008/06/14/technology/14email.html?_r=2&scp=2&sq=information%20*
*overload%20research%20group&st=cse*

## Other drivers of knowledge management

The KM literature (Knight and Howes, 2003; Evans, 2000) refers to a range of other common issues that motivate organisations to consider KM. These can be considered under three broad headings, avoiding so-called 'costs of ignorance', the emergence of new technology, and the recognition of knowledge as a valuable asset and source of competitive advantage:

- An independent Norwegian-based foundation DNV-CIBIT (2009) suggests that an effective approach to KM can help mitigate 'costs of ignorance'. Typical 'costs' include:
- People have difficulty finding the information and knowledge they need to make key decisions
- Employees lose productivity by searching for information across disconnected, non-validated and non-compatible knowledge repositories and databases
- Good ideas and best practices are not shared, which raises overall costs of providing service
- Findings from research and development are not making their way into practice quickly enough
- Costly mistakes are duplicated because earlier ones were not recorded or analysed
- Work is redone because people are not aware of activities and projects which have been executed in the past
- Useful sources of information and knowledge are frequently stumbled across by accident
- One or two key employees hold crucial knowledge, and continuity of operations is at risk when they retire or are transferred.

*Source: DNV-CIBIT, a Netherlands branch of the Norwegian consultancy firm DNV*
*http://www.dnv.com/services/consulting/knowl-edge_management/Drivers_for_knowledge_man-agement.asp*

- An important reason why KM has become so popular is that new technology makes it easier to share knowledge. At its simplest, conference phone calls means that several people in different cities can talk together on the telephone. Electronic databases make it possible to store vast amounts of knowledge, to which others can be given access. Email means people can communicate quickly, cheaply and over long distances. More recently, the advent of the second generation internet, where interactivity among users is key, has opened up many exciting new ways for organisations to communicate with both their employees and customers.

Technology has also resulted in huge advances in relation to the effective recording and storage of information and experience. Organisations need good records management for awareness, business use, sound decision making, security, evidence and accountability.

- For many organisations the collective expertise and experience of its workers is a vital resource. Economic developments that can result in organisations outsourcing or restructuring, and demographic factors such as large scale retirements, have highlighted to organisations the importance of firstly, being aware of workforce trends and secondly, the implication of these trends for their businesses.

One work force trend that has emerged is the impact of an ageing workforce, with large numbers of employees who joined organisations in the decades after the second world war reaching retirement age. The resulting loss of knowledge and experience and the requirement to accelerate the learning curve of any new staff represents a significant challenge.

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# Preparation for a retirement boom

The Social Security Administration (SSA) in the US predicted a retirement boom among its own workforce. It estimated that from 2000 to 2010 the agency would lose more than half its employees, including a large number of leaders.

Having been made aware of the extent of its ageing problem and the consequent loss of organisation knowledge and know-how this would entail, the SSA set about developing a more strategic approach to managing its workforce. The programme, Future Workforce Transition Planning, provided agency leaders with a framework for identifying the key trends likely to affect its workforce as well as the strategies they should pursue to address these challenges.

Using this strategic workforce planning process, the SSA has turned crisis into opportunity. By aggressively recruiting new talent and reshaping its workforce, while improving the skills of employees through training and development, the SSA's productivity and service to its customers has continuously improved each year.

The US think-tank, Partnership for Public Service, who analysed the SSA experience noted that collecting and analysing workforce data, to support fact-based decisions by agency leaders has been a hallmark of SSA's human capital management.

*Source: Partnership for Public Service*
*http://www.ourpublicservice.org/OPS/publications/viewcontentdetails.php?id=81*

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# 2  Implementing knowledge management to enhance decision making

Using KM to enhance decision making has several aspects. Firstly, making better use of the knowledge that exists within an organisation, through the appropriate use of tools and techniques that support knowledge capture and sharing. Related to this is the area of records management. Records are an essential element of good governance. They provide evidence, ensure accountability and inform decision making. Also relevant is the emergence of Web 2.0, which facilitates greater user-participation through the internet. In various ways, activities like blogging, the development of wikis and similar software can support knowledge capture and sharing that leads to more efficient decision making.

## How to get started

Knight and Howes (2003) suggest that organisations frequently come to KM because they have spotted a gap in how well the organisation does things and look to undertake or commission some work to address this. It could be a database, intranet, discussion board or some kind of specialist software deployment. However, many organisations are disappointed at the impact of their intervention, which fail in their objective of promoting internal communication and knowledge sharing. When this happens the issues are seldom technical, rather the interventions are not fulfilling their potential because they are not perceived to address the real IM and knowledge sharing problems within an organisation and, furthermore, they are seen to generate more work without any consequent benefits.

A more comprehensive route into dealing with knowledge issues is to conduct a 'knowledge audit', that is, a sound investigation into an organisation's knowledge 'health' or 'where are we now'?.

A typical audit will look at:

- What are the organisation's knowledge needs?
- What knowledge assets or resources does it have and where are they?
- What gaps exist in its knowledge?
- How does knowledge flow around the organisation?
- What blockages are there to flow, e.g. to what extent do its people, processes and technology currently support or hamper the effective flow of knowledge?

There are a wide variety of approaches to conducting a knowledge audit, with varying levels of coverage and detail. According to the UK NHS KM team, an organisation may choose to use some or all of the following:

1. *Identifying knowledge needs* The first step involves clarifying what knowledge the organisation and the people and teams within it need in order to meet their goals and objectives. Common approaches include questionnaire-based surveys, interviews and facilitated group discussions, or a combination of these.

2. *Drawing up a knowledge inventory* A knowledge inventory is a stock take to identify and locate knowledge assets or resources throughout the organisation. It involves counting and categorising the organisation's explicit and tacit knowledge. In the case of explicit knowledge it examines things like, numbers, types and categories of documents, databases, libraries, intranet websites, links and subscriptions to external resources etc, and also their purpose, relevance and quality. In the case of tacit knowledge, there is a need to consider staff; who they are, where they are, what they do, and their qualifications, skills and experience.

*3. Analysing knowledge flows* An analysis of knowledge flows looks at how that knowledge moves around the organisation – from where it is to where it's needed. The focus at this stage is on people: their attitudes, habits and behaviours in respect of knowledge sharing. This will usually require a combination of questionnaire based surveys and follow-up qualitative research.

For more details see: http://www.library.nhs. uk/KnowledgeManagement/ViewResource. aspx?resID=93807

Other approaches to conducting a knowledge audit are available from the UK IDeA  www.idea. gov.uk/idk/core/page.do?pageId=8179066

Carrying out a knowledge audit is not a quick or simple process, and so the time and effort required needs to be justified by a clear purpose and set of actions that will be taken as a result of what the audit reveals. An organisation may choose to document the latter in a KM strategy. This is a statement of the role played by knowledge in the organisation and how it can be mobilised in support of business objectives. The purpose of the strategy is to establish a framework and concrete action plan in respect of the generation, capture and sharing of knowledge. As with all strategies, a KM strategy should be clearly aligned with business objectives and should include details on issues such as the context and rationale for the strategy, key stakeholders, resources and methods of evaluation.

## CASE STUDY
## Developing a knowledge management audit and strategy

There is a particular premium on past experience, know-how and information in state legal offices.  Both the Attorney General's (AG) and the Chief State Solicitor's (CSS) Offices in Ireland have a Library & Know-how Unit which is managed by a qualified information professional, and both units include a Know-how Officer on their staff.  The Offices' Statement of Strategy includes the objective 'to provide staff with the knowledge and information required to deliver high quality services through the provision and development of professional library, research and know-how resources and services'.

In order to progress this objective, an inter-disciplinary steering committee, with representatives of both the AG and CSS was established. Consultants were appointed to conduct an information audit and to develop the strategy with the project team. Through conducting personal interviews and focus groups with a cross-section of employees, it was possible to establish the critical knowledge and information used by staff to undertake their work and to identify gaps in the provision and sharing of that knowledge and information. The audit also identified a range of both enablers and barriers to knowledge and information sharing within the two organisations.

The purpose of the KM Strategy is to provide a framework for identifying, capturing, delivering and re-using AG/CSS offices' knowledge and information, to enable greater work efficiency and enhance the delivery of high quality legal services. In order to achieve these objectives the strategy particularly emphasises the role of people and their behaviour, noting that, if staff believe that they will benefit from sharing their knowledge, they are more likely to participate in new procedures and use the facilitating technology.

The consultants' report makes twenty recommendations to support the knowledge management strategy. Selected examples of these recommendations are outlined on the following page.

# Knowledge Management Strategy Recommendations

(selected examples) see case study, p.14

| Capture and storage of knowledge and information | |
|---|---|
| **Recommendation 3**<br><br>Implementation of a staff specialisms and skills locator | This will ensure that staff are aware of the subject specialisms and skills of their colleagues. |
| **Capture and storage of legal knowledge and information** | |
| **Recommendation 4**<br><br>The development of an Intranet-based shared know-how application (to replace the existing know-how database in the AG's office) | To ensure increased efficiency, reduced duplication of effort and the promotion of consistency and quality in the generation of legal advice. The know-how application will facilitate the indexing, abstracting, updating and retrieval of legal know-how. |
| **Generating and sharing knowledge and information** | |
| **Recommendation 15**<br><br>Introduction of a joint legal bulletin | A monthly legal bulletin will inform staff of legal developments and could include, for example, details of new legislation, pending legislation, judgments received, books received and recent additions to the know-how application. |
| **Recommendation 19**<br><br>The introduction of Communities of Practice (CoP) (initially it is recommended that a pilot CoP be launched) | CoPs are informal groupings of individuals who share their interest and knowledge of a particular area through a range of forums, e.g. face-to face meetings, bulletin boards, conference calls etc. |

*Source: O'Riordan (2005)*

## Knowledge management tools and techniques

Tools and techniques for enhancing organisation knowledge and thereby facilitating better decision making, are categorised under a wide range of headings including knowledge capture, knowledge creation, knowledge harvesting, mobilising knowledge, generating knowledge, managing knowledge and knowledge sharing. There is considerable overlap between all these concepts.

The purpose of all tools and techniques is to help in the process of recording and packaging knowledge for reuse. Organisations must be in a position to capture new knowledge in order to continuously improve and adapt to ongoing change. There are a wide range of tools and methods for achieving this. Some of the more important ones are discussed here.

**There are a number of useful guides to KM tools and techniques, used in the preparation of this report, available on-line:**

The Swiss Agency for Development and Cooperation has a comprehensive guide under the title 'Dare to Share'. An overview of each tool is provided, its benefits and a step-by-step guide to how to go about it. Available at: http://www.daretoshare.ch/en/Dare_To_Share/ Knowledge_Management_Toolkit?officeID=73

The library of the NHS in the UK has an excellent section on knowledge tools and techniques which can be found at: http://www.library.nhs.uk/KNOWLEDGEMANAGEMENT/SearchResults. aspx?tabID=289&catID=12417

The UK IDeA has a guide that categorises tools under three headings, connecting people to information and knowledge; connecting people to people; and organisation improvement: http://www.idea.gov.uk/idk/aio/8595069

### After Action Reviews (AAR)

An AAR (also known as a retrospective review) is a discussion of a project or an activity. It enables the individuals involved to learn for themselves what happens, why it happens, what went well, what needs improvement and what lessons can be learnt from the experience. The spirit of an AAR is one of openness and learning – it's not about problem fixing or allocating blame. Lessons learnt may be shared on the spot by the individuals involved or explicitly documented and shared with a wider audience.

The size of an AAR may reach from two individuals conducting a five minute AAR at the end of a short meeting, to a day-long AAR held by a project team at the end of a large project. Activities suitable for an AAR simply need to have a beginning and an end, an identifiable purpose and some basis on which performance can be assessed. AARs are particularly relevant for helping decision making in times of crisis or difficulty, as was referenced in the Efficiency Unit's report on crisis management, p. 28 http://www.eu.gov.hk/english/publication/pub_bp/files/crisis_management.pdf

## CASE STUDY
## US Wildland Fire Use, after action review

In November 2006, a gathering of wildland fire managers assembled to review that season's wildland fire use activities and incidents. Participants included national level programme leaders from the federal wildland agencies, regional and geographical managers, agency administrators, members of interagency fire use management teams, and experienced interested practitioners. Experiences were compiled in an AAR.

The group reviewed a range of themes: programme advances and management support, policy interpretation and implementation, and incident management, under three headings: what was planned, why did it happen the way it did, and what can we do next time? A range of useful conclusions were arrived at in respect of the future management of wildland fires, with an emphasis put on acting on and disseminating these so that improvements could be realised.

*Source: http://www.wildfirelessons.net/Home.aspx*

### Knowledge exchange/Exit interviews

A knowledge exchange should take place when someone is moving on from their current position. It aims to recover unique and valuable information from them before they leave. An exit interview more specifically relates to why an employee is actually leaving the organisation, either due to retirement or to work elsewhere. Exit interviews have evolved from human resource management feedback interviews to become a KM tool, as a means of capturing the experience and know-how of a departing employee.

Knowledge exchanges enable an organisation to ascertain the skills and experience they are about to lose and to determine if further action for example, coaching or mentoring of the person's replacement, is required. For the departing employee there is the opportunity to articulate their contributions to the organisation and to 'leave their mark'. The greatest benefit arises where knowledge exchange is a formalised and structured process, prepared by all parties.

## CASE STUDY
## Knowledge retention

The UK National Savings and Investment Bank, formerly the Post Office Savings Bank, faced a significant problem when a long-serving and key member of staff requested early retirement. The bank realised that it needed to act consciously and deliberately to capture the knowledge that it was about to lose.

John, the employee in question, had been with the Treasury before joining the bank in the early 1970s. Since then he had built up an impressive knowledge base of relevant statutes, key processes and protocols. His career had been built on the accumulation of important knowledge. However, he was not prone to communicate that knowledge proactively, though when asked he would always share his know-how. He revelled in the mystique about what he did and what he knew and tried to maintain his reputation as an organisation guru. 'Ask John' became a habit and a phrase that reinforced the situation. Not surprisingly then, the Bank and in particular John's division were thrown into turmoil when he announced that he had applied for early retirement.

John had no wish to see the organisation suffer through his immediate departure and agreed to work for a further nine months and in return the Bank agreed to a reduced working week. Some of John's tasks and responsibilities were shared out to other colleagues, thereby reducing the pressure of losing such a significant volume of knowledge in the future. In addition, John was actively involved in recruiting his successor who worked alongside him for three months until his retirement. In this way John's unique knowledge base was captured through a process known as 'guided experience'.

John's retirement acted as a catalyst for the bank in implementing an improved process of KM, which they had been aware was required in order to meet Freedom of Information and compliance requirements. The new system supported improved record keeping and the documentation of know-how etc.

*Source: DNV-CIBIT http://www.cibit.com/site-en.nsf/p/News-Knowledge_Retention_at_NS_I*

### Knowledge banks

Knowledge banks (also referred to as knowledge repositories or knowledge centres) are online services and resources which hold information, learning and support. They are typically used to showcase the information, expertise and learning of an organisation and to provide signposts to documents, articles and toolkits.

Two examples of knowledge banks are the US army's Centre for Army Lessons Learned and the UK Learning and Skills Improvement Centre's Excellence Gateway, an online service for those working in the post-16 learning and skills sector in England ( http://www.excellencegateway. org.uk/ ).

## CASE STUDY
## What does the US army know about hurricane clean-up?

Several years ago Professor John Henderson of Boston University was talking to a group of senior BP managers. He began by asking whether BP had any formal approach to capturing strategic knowledge. The chief engineer raised his hand and described a database of 'project lessons learned'.

John then told them of a US army colonel he had interviewed. This colonel had once got a call at eight o'clock on a Saturday morning, shortly after a hurricane had hit the surrounding region. The orders to the colonel were: 'Go down there. Provide any support necessary to the people. And don't screw up'.

This colonel had never actually commanded any operation related to civilians. He'd always been in the front line, in hot action. But he did have the benefit of an army executive education programme, where he'd been exposed to the Centre for Army Lessons Learned. So he got his laptop computer, dialled into the army net, hooked into the Centre for Army Lessons Learned, and asked the following question. 'What does the Army know about hurricane clean-up?' Within four hours he had:

- A profile of troop deployments after the last three hurricanes in North America, including types of staff, types of skills, and numbers of skills
- A pro-forma budget - both what budget was required and what the actual budget was, as well as where previous cost overruns had occurred
- A list of 'ten questions you will be asked by CNN in the first thirty minutes after your arrival'
- A list of every state and federal agency that had to be contacted and coordinated with, including the name of the each agency's contact person and the army liaison currently working with each agency
- Established an advisory team of the three commanders who had managed those previous hurricane relief operations

At the end of the story, the chief engineer again spoke. 'You asked whether we had a formal approach to capturing knowledge. Well, we have nothing, nothing at all, that is anything like that'.

*Source: http://www.bp.com/genericarticle.do?categoryId=98&contentId=2000666*

## Communities of Practice

A CoP is a network of individuals with common problems or interests who get together to explore ways of working, identify common solutions and share good practice and ideas. CoPs pool resources related to a specific area of knowledge. In theory they should be organic and self-organising, evolving from recognition of a specific need or problem.

Informal communities exist in some form in every organisation. The challenge is to support them so that they can create and share organisational knowledge. Technology allows people to network, share and develop practices online and overcomes the challenge of geographical boundaries. Many CoPs only interact online.

A report by the Swiss Agency for Development and Cooperation documents six essential aspects of a successful CoP:

- Strong community: a group of (more or less) active members with a lively interest in the CoP and its topics and who give it priority. It is acceptable, and in fact desirable, that the member pool fluctuates.

- Clear and well-defined domain: there is a specific thematic orientation; the domain is relevant and meaningful to members.

- Links to own practice: members are active in the given domain. Shared experiences, concepts and strategies spring from and are being tested against the individual reality of practice.

- Personal motivation: membership is voluntary and based on personal interest.

- Mandate: members' organisation(s) are interested in the focus and objectives of the CoP. The commitment of members is supported by providing necessary working time and resources.

- Informal structure: the CoP may cut across unit, organisation and hierarchical boundaries.

*Source: http://www.daretoshare.ch/en/Dare_To_Share/ Knowledge_Management_Toolkit/Community_of_ Practice*

## CASE STUDY

## Online platform for Communities of Practice

The IDeA has developed an online platform that allows people to set up and join CoPs specifically for local government bodies. The initiative was a winner at the UK eGovernment National Awards in 2008.

The CoPs are professional networking sites that utilise interactive internet technology to support the sharing of knowledge, know-how, skills and good practice across local government.

At its launch in 2007, the platform was set a target by senior management of registering 13,000 users by 2009. This figure has been significantly surpassed. The site has 100% coverage among the 411 councils in England and Wales and incorporates over 500 individual communities on issues ranging from health to social issues, community issues, education and so forth. Membership of communities ranges from a handful of people to several hundred.

According to one user of the Policy and Performance CoP, the most popular CoP on the platform: 'It's unique because you can dip in and out when you want to. You are not constrained by attending conferences or pouring over journals. It's there if you want to use it and it's useful. We're all serving the same cause and trying to serve the public. If a document, policy or strategy on the CoP works in one area, chances are it will work in yours'.

*Source: www.communities.idea.gov.uk*

## Records management

Records management is a function or set of tasks and activities which authorities must carry out to operate effectively. Where records are being created and received it is necessary to have a system to keep them, to link them, to find and refer to them again and to decide when and how to dispose of them when they are no longer needed. Records management is not an arcane art; rather it is a practical and common-sense activity that supports the goals and functions of the organisation.

The Australian National Archives provide the following definition of a record:

*A record is all information created, sent and received in the course of carrying out the day to day work of an organisation. Records have many formats, including paper and electronic. Records provide proof of what happened, when it happened and who made decisions. Not all records are of equal importance or need to be kept. However, where records are perceived to be of value they need to be captured, managed and safeguarded in an organised manner. Records that relate to high-risk areas of your business require most attention as they need to be kept to provide evidence, to support your actions and to ensure accountability.*

*Source: National Archives of Australia*
*http://www.naa.gov.au/records-management*

Increasingly the vast majority of government records are produced electronically ('born digital'). These include word-processed documents, spreadsheets, multi-media presentations, email, websites, online transactions and databases. The management of electronic records raises particular challenges in respect of their appraisal, selection, transfer, storage, sustainability and delivery. In particular, the physical carriers of digital information are vulnerable to damage and not as durable as traditional storage media such as paper. Also, the hardware and software used to access digital information changes constantly.

To avoid problems associated with technical obsolescence, it is necessary to continually upgrade systems and renew commercial software licenses.

The benefits of good records management are considerable:

- Decision making and operations are properly supported and informed by relevant records
- Accountability is demonstrated because the records provide reliable evidence of policy, decision making and actions/transactions
- Records are managed in compliance with and as required by standards and regulations
- Staff time is saved in both the filing and retrieval of records by having a system in place
- Record storage is more cost effective because redundant records are removed.

*Source: UK National Archives (2006)*
*http://www.nationalarchives.gov.uk/documents/what_rec_man.pdf*

According to Smith (2007), it should always be remembered that the main driver for good records management is business efficiency. The international standard ISO 15489 was developed in response to a consensus within the international records management community to standardise international best practice. It focuses particularly on the business asset that records provide to an organisation. It emphasises that a good record management system provides a source of information about business activities that can support subsequent activities and business decisions and can ensure accountability to stakeholders. See http://www.iso.org/iso/catalogue_detail?csnumber=31908#

As with any resource that requires management, organisations need to know the quantity and nature of the records that they wish to retain. The best way to do this is through carrying out a comprehensive record survey or audit. The survey is the basis for the physical and intellectual management decisions about the

organisation's records. It provides an organisation with all the information needed to manage their records effectively, including efficient and effective storage and retrieval, improved records filing systems, disposal schedules and vital records protection.

The actual survey (either by interview or questionnaire) should encompass knowledgeable members of staff representing all business areas who will be able to provide the necessary information on their team's records. Consideration also needs to be given to how to hold the information. A relational database will enable production of searchable and sorting-enabled tools such as a full records inventory, retention schedules, vital records inventories, file plans etc. In smaller organisations a spreadsheet may be sufficient.

Ultimately, records are created and captured in order to be used, therefore record keeping systems must include effective mechanisms for retrieving records and tracking their whereabouts and use. Procedures should be put in place to ensure swift retrieval, an audit trail for use and, for paper records, their accurate return. A good records retrieval operation should contain the following elements:

• Effective finding aids to identify the record and provide location details and access restrictions particular to it (e.g. indexes, databases, file plans)

• Authorisation for access (e.g. for named staff or according to their role and function)

• Security clearance system, if appropriate

• For paper copies, a register to record details of records accessed, their location, member of staff responsible and return.

*Source: http://www.nationalarchives.gov.uk/ documents/recordkeeping_rec_maintenance_ guide5.pdf*

The UK National Archives ( www.nationalarchives. gov.uk ) has extensive guidance in respect of all aspects of record management. In particular, they have prepared substantive guidelines in respect of machinery of government changes. A machinery of government change is a transfer of functions between ministers, either across departments or between a department and an agency.  The guidelines provide advice for both the 'exporting' and 'importing' departments in relation to the transfer of records, information and knowledge. See: http://www.nationalarchives. gov.uk/documents/mog.pdf

The National Archives Office of Australia has a check-up tool for assessing an organisation's records management capacity. This is available at: http://www.naa.gov.au/Images/Check-up%20 text%20version_tcm2-12664.pdf

Also see guidelines of the National Archives of the US at: http://www.archives.gov/records-mgmt/policy/

## Assessment: Quickly assess your organisation's records management practices

The National Archives Office of Australia lists questions your organisation can use to quickly assess its records management activities. The answer to all questions should be 'yes'.

Does your agency have:

• An information management framework in place to strategically capture and manage information, including records, in a co-ordinated way

• A strategy in place to guide the systematic planning of records management improvement activities

• A records management policy on creating and managing records

• Assigned records management responsibilities

• A knowledge of what records it needs to make and keep to support its business

• A developed procedure and system to ensure the capture and management of these records

• Systems in place which will ensure that records: can be proven to be genuine; are accurate and can be trusted; are secure from unauthorised alteration, deletion and access; are findable and able to be read; are related to other relevant records

• Trained staff to meet their records management responsibilities

• A preservation strategy for records

• A regular schedule of audits of record management practices

*Source: National Archives of Australia (2008)*
*http://www.naa.gov.au/Images/Check-up%20text%20version_tcm2-12664.pdf*

### Web 2.0

Web 2.0 is a label for the emergence of greater user-functionality on the internet. Where Web 1.0 involved only one way 'push' communication, Web 2.0 software such as blogs, wikis, social networking sites and mapping technologies have enabled anyone to interact and publish online. It is this mutual or collaborative characteristic of Web 2.0 innovations that have led them being described as individual or user-centric.

A potential strength of these tools with regard to decision making is their capacity to facilitate collaboration and dialogue. In addition to communicating with one another, many users also contribute to the collective development of products and services. By 'crowdsourcing' (as opposed to 'outsourcing') some businesses are harnessing external expertise by engaging directly with and rewarding participation from their customers, users and a wide pool of informed contributors (Reference: www.wikinomics.com/book ).

A report by the UK Cabinet Office (2009a) on innovations internationally in public service delivery, notes that in many instances governments and providers of public services have responded to the World Wide Web by simply transferring information from paper to an electronic format. While this is of value in making it easier to find and search for information, it is far from harnessing the full potential of the internet, now available through Web 2.0 technology.

The challenge for public service organisations will increasingly be to engage citizens and customers in places where they already are (in social network sites and online communities) rather than creating portals and all-purpose websites and expecting citizens and customers to come to them. During the 1980s management guru Tom Peters advocated that all executives, whether in the private or the public sector, practice 'managing by wandering around' as a key to leadership excellence. At the time this meant being physically on the office or factory floor, in an employee or constituent's office or in the canteen. Two decades later, to be an effective leader, it has been suggested, there is a need to 'wander online' (Wyld, 2007).

However, Wyld (2007) also notes that several commentators have struck a note of caution in relation to the opportunities afforded to organisations by Web 2.0 tools. He cites Matthew Taylor, a chief political strategist of former British Prime Minister Tony Blair, as describing the internet as 'fantastic' for democracy, but adding that the often shrill discourse found on the internet could be problematic perhaps even approaching a 'crisis'. Tim Berners-Lee, the developer of the World Wide Web, has expressed concern at the growing potential of the web to 'spread misinformation and undemocratic forces'.

Effective engagement with citizens is increasingly an area of concern for public services internationally. Web 2.0 technology offers groundbreaking opportunities in this regard, with governments increasingly seeing opportunities for citizens to become more involved in the design and delivery of services (as for example, in the highly innovative Cologne case study cited below). However, initiatives in this regard need to be approached with care. Considerable time and organisation resources need to be dedicated to maintaining these services and ensuring that their content is balanced and reliable. There is also a significant cultural challenge for many administrations to overcome, in evolving towards a situation of transparency in respect of government information (Cabinet Office 2009a).

CASE STUDY
## Participatory budgeting through Web 2.0

Participatory budgeting was introduced in Cologne in Germany as part of a wider agenda of 'services for citizen participation'. The municipal administration recognised that to put citizens at the centre of governance it is necessary to give them a say over public funds. Participatory budgeting has been piloted in the city through an e-participation internet platform. The platform empowers citizens to participate in planning the budget by submitting proposals, comments and assessments, and submitting votes for or against specific proposals.

The system encourages ongoing online discussion, rather than dialogue always being part of a tightly time-limited event. To manage the flow of conversation and to target contributions, the interactive website was carefully and transparently overseen by forum facilitators.

The success of the project is largely due to its high profile across the city – the project was publicly advertised and information leaflets were sent to each household. The levels of involvement in Cologne surpass comparable projects elsewhere in Europe – there were around 5,000 proposals submitted, more than 52,000 votes entered, and around 120,000 unique visitors to the site. The pilot phase of the project cost about €300,000 to set up and run. The initiative is now developing towards the introduction of improved systems in 2010.

*Source: Cabinet Office 2009a http://www.cabinetoffice.gov.uk/media/224869/world-class.pdf*

A discussion paper with detailed descriptions of some well-known Web 2.0 tools can be found on the website of the UK based Chartered Institute of Personnel and Development at: http://www.cipd.co.uk/NR/rdonlyres/98069864-4E82-494D-A9C8-1FC4FDB6D23C/0/web20andhumanresources.pdf

This report will discuss two of the more prominent Web 2.0 tools - blogs and wikis.

## Blogs

Blogs – a shortened form of weblogs – are a personal online publishing system. Utilising software developed for the purpose (e.g. Wordpress or Blogger), individuals can simply and quickly write, publish and distribute their own opinions via the internet. Entries appear in chronological order, hence giving the appearance of a simple diary. However, blogs should be interactive, with readers able to leave comments and generate discussions. For many this latter feature is fundamental. According to Mike Cornfield, a professor at George Washington University in the United States (cited in Wyld, 2007, p.36) 'without comments, a blog is just a glorified press release'.

Two further advantages of blogs are their immediacy, you can speak to your audience no matter where you happen to be, via a mobile phone or Blackberry. Secondly, blogs, because of the dynamic nature of the content, are search engine friendly. Through judicious blogging (quality content, the use of key words and phrases, and links to more information), blogs can act as a funnel to an organisation's main website.

There is growing interest in blogging across governments. Budd (2005, cited in Wyld 2007) identified the principal benefits of blogging to government as the capacity 'to communicate directly with the community, bypassing both internal and news based editorial control' and 'to give a human face to often monolithic organisations'. Other commentators have referred to blogging as making governments more 'open' and 'putting a human face on government'.

Blogging can be demanding. Posts need to be of high quality and regularity to maintain an audience, so careful consideration needs to be given to whether an organisation, part of an organisation or individual are prepared to make the commitment. David Wyld has some tips for those who do:

- Define yourself and your purpose
- Do it yourself
- Make a time commitment
- Be regular
- Be generous

However, even if some organisations are hesitant about starting their own blogs, all organisations, public and private, should care a great deal about what bloggers, employees or customers, are saying about them.

## The challenges of public service blogging

Clayton Wilcox is the superintendent of schools in Pinellas County, Florida. In 2005 he started a blog, dubbed 'The Classroom'. The blog allowed Superintendent Wilcox the chance to present his views on a wide variety of educational matters and attracted a high level of attention, with one of his posts eliciting over 800 comments. However, in May 2006, Superintendent Wilcox abruptly ended his blog with the following post:

'I imagine this will be my last post…I will try to archive the posts received up to this date… some will say that I wimped out…I will just say this…the lies, distortions and mean spiritedness of some – was not worth my time or worthy of this district'.

Wilcox subsequently commented that the blog had been an effective tool for a while, However, 'the lack of civility' of a few anonymous commenters who came to dominate the blog ruined it, and the 'forum became ugly'.

In late 2006, the blog was restarted, but with new rules. The blog, now shared by Superintendent Wilcox and other top district administrators, restricts comments to registered participants only and does not allow the anonymous comments that proved so troublesome in the past. Additionally, a strict policy in relation to inappropriate comments was introduced.

The Classroom can be viewed at http://blogs.tampabay.com/classroom/

*Source: Wyld (2007)*

CASE STUDY

## Sharing intelligence through blogging in the US military

The American military is realising that its traditional top-down structure, with long decision cycles and one-way flow of information is not a good fit for today's needs. It is seeking to replace the traditional 'push' model of information, where vast amounts of information flow down to the field, inundating commanders with data, with a 'pull' model, whereby soldiers can search and retrieve the right information at the right time.

In response to the threat of a rapidly evolving enemy that can act quickly, the US Strategic Command (STRATCOM) is in the process of implementing 24-hour, real-time, secure communications from generals to soldiers. The centrepiece of the effort is the Strategic Knowledge Integration, or SKI-web, 'a 24/7/365 virtual intelligence meeting, with blogging and chat as essential parts of the operation'.

Blogging is central to General James Cartwright's efforts to transform the culture and information flow at STRATCOM: 'The metric is what the person has to contribute, not the person's rank, age or level of experience. If they have the answer, I want the answer. When I post a question on my blog, I expect the person who has the answer to post back. I do not expect the person who has the answer to run it through the OIC (officer in charge), the branch chief, the executive, the division chief and then get the garbled answer back before he or she can post it to me. The Napoleonic Code and Netcentric collaboration cannot exist in the same space and time.

*Source: Wyld (2007)*

### Wikis

A wiki (from the Hawaiian term for 'quick') is a collaborative type of web application allowing end-users to create and update content, so generating an online community responsible for improving the quality and accuracy of content overtime. The theory behind wikis is that end users are the ones in the know and are therefore the best people to develop and edit content.

Wikis use 'open source' Mediawiki software. This was originally written for Wikipedia, the web-based encyclopaedia, established in 2001 and written collaboratively by volunteers.

Within organisations wikis can prove beneficial by having often remote users create organisational knowledge that is permanent and searchable.

## CASE STUDY

## Using Mediawiki software to develop a knowledge bank at Cardiff Council

Cardiff Council is the largest employer in Wales, with more than 18,000 staff. There was a clear need for a knowledge management system that was flexible, low-cost and relevant to the needs of staff.

The solution was to use free, 'open source' Mediawiki software to develop the Cardiff knowledge bank. Any member of staff with a username and login ID can access the knowledge bank through the Council's intranet. Technical knowledge is not necessary and staff can:

• Search existing articles

• Edit and expand articles or create new content

• Share knowledge

• Work collaboratively on developing new initiatives.

While the knowledge bank is supported by a dedicated knowledge officer, the real work is done by the 157 active users who have to date added about 900 pages of content in relation to all aspects of council business. While new pages are patrolled, the quality has been found to be very good, possibly reinforced by the fact that every entry is recorded against a user ID.

For the Council the principal benefits are the reduced time staff spend looking for information, coupled with the added knowledge gained by using the knowledge bank. In addition, more junior staff feel valued as a result of being able to contribute to the Council's 'body of knowledge'.

*Source: IDeA  http://www.idea.gov.uk/idk/core/page.do?pageId=9374555*

## The Invisible Web and finding the right information

The visible and invisible web are terms that have emerged to differentiate between information that can/cannot be found by using general purpose search engines (e.g. Google or Yahoo!). The invisible web (also known as the 'deep web' or 'hidden web') represents by far the largest sector of online information resources on the internet.

Some of the reasons why information resources cannot be accessed by the likes of Google are technical. In addition, subscription or fee-based databases are not always available to search engines and, certainly, the depth of content will not be accessible. Similarly websites that are very deep and rich in content form a substantial part of the invisible web. Search engines set a limit on how much material they index from a site. This means that information rich websites contain regularly overlooked material. This will invariably include the most current and recently added information.

The existence of the invisible web presents challenges for researchers looking to access relevant information on the internet. No corresponding tool to Google exists to access the invisible web, and so those looking to explore a topic comprehensively must learn to utilise many search tools and give more time to invisible web searching.

Some entry points to the invisible web include the use of web tools that call themselves search engines for the invisible web (for example: www.completeplanet.com or www.incywincy.com).

Publicly funded and free to use services such as the Librarian's Internet Index ( www.lii.org ), which provide weekly updates on high-quality websites carefully selected, described, and organised can also guide users to invisible web content.

Databases form a huge part of the invisible web. These are typically organised with a special purpose or subject in mind and the information is of high quality. Some databases are government sponsored and free to use (for example in the US, ERIC, an online digital library of education research and information or PubMEd, the database of the US National Library of Medicine), others are commercial such as EBSCOhost, an electronic journals service.

Lastly, finding the right content on the internet can simply be a matter of digging deeper into likely and recommended websites. Navigating a site requires more than just using its search features. It may require probing the material available and recognising what links can lead to useful information. Also helpful is an understanding of the structure of the website. Ultimately the benefit of time spent in this way is that it is the researcher who makes the decisions, rather than depending on a computer program to determine relevancy.

An excellent introduction to the invisible web, from which much of this section draws on, can be found in Devine and Egger-Sider (2009), 'Going Beyond Google'. The book includes a list of web myths, an edited version of which is included below.

**Some common internet myths:**

*Everything worth finding is already on the Web, or if it can't be found on the Web, it's not worth finding:* While information on the internet can be easier to access, the world of information still includes print sources, other formats and people with expertise.

*Google searches the whole web:* The overwhelming number of results that users call up with their queries probably creates this mistaken impression. Studies have shown the invisible web to be about 500 times the size of the visible web.

*The best information is found in the first ten results:* There is no guarantee that the search engine's assessment of relevancy will match the users. Furthermore, web designers can create websites that will ensure top placements in web searches.

*Searching is easy:* Successful research can be time consuming. A saying in the library world is that 'searching is easy; finding is more difficult'.

*Everything important is free:* Information is a commodity and sometimes it is necessary to pay.

*Everything is truthful, authoritative and accurate:* Even where providers have the best of intentions information may be tainted with bias and inaccuracies. Good evaluations skills are always required.

*Source: Devine and Egger-Sider, 2009*

### Bookmarking and Tagging

Related to the topic of effective internet searching is the idea of bookmarking. Even the first web browser offered ways to mark frequently used websites in order to be able to return to them easily. However, bookmarks are rarely well organised (typically just one long list without any way to find a specific one). Also they are restricted to the computer they were created on and therefore not available to other users unless manually copied.

One solution to these problems is for someone within an organisation to create a well organised webpage with useful links. An alternative solution that requires no knowledge of how to create web pages is the use of dedicated software such as Delicious ( http://www.delicious.com ). This is a service that allows users to tag, save, manage and share webpages from a centralised source.

At its most basic, Delicious stores bookmarks on its website and accounts may be shared by multiple users within an organisation. However, it is also able to tell individual account holders how many other users have added the same link and give them access to their accounts. This is the social aspect of the service. It is assumed that users who add the same resources are interested in the same topics and so gives people the scope to browse material accumulated by others. A further resource that facilitates information searching is the option to use notes and tags. The notes field allows users to enter a narrative description of the link being added, while tags allow users to add additional keywords associated with the links, which facilitate in the organisation of bookmarks (for further information see Sauers, 2009).

## Security

Governments are taking an increasingly high level of interest in cyber security. According to the UK Government's Cyber Security Strategy (Cabinet Office, 2009b – http://www.cabinetoffice.gov.uk/reports/cyber_security.aspx ): 'As the UK's dependence on cyber space (i.e. all forms of networked, digital activity) grows, so the security of cyber space becomes even more critical to the health of the nation. Cyber space cuts across almost all of the threats and drivers outlined in the National Security Strategy: it affects us all, it reaches across international borders, it is largely anonymous, and the technology that underpins it continues to develop at a rapid pace'.

The Strategy highlights the need for government, organisations across all sectors, international partners and the public to work together to meet its objectives of reducing risk and exploiting opportunities by improving knowledge, capabilities and decision-making in order to secure the UK's advantage in cyber space. Both the UK and the US governments were, in autumn 2009, in the process of establishing offices of cyber security.

Individual organisations also need to keep abreast a wide range of security issues. Many of these will be addressed by ensuring that the organisation has standard good practice Information Technology (IT) and Human Resource Management procedures. Organisations must also have procedures in place in relation to employee's use of email and the internet.

### Effective email and internet security policies

It could be argued that the best defence against viruses, worms and Trojans is to not allow your computers access to the outside world, which is virtually impossible these days. Banning all attachments is not the answer either. However, an effective email and internet policy will significantly reduce the risk and an effective firewall and virus scanning software should hopefully handle the rest. Some points that should be in your email and internet policy are:

- Personal use of an employer's email is permitted, but should be kept to a minimum
- Employees should be informed that they have no expectation of privacy or guarantee of confidentiality in email sent or received through your organisation's email system or in websites accessed
- Inform employees that the organisation reserves the right to monitor the email system and internet usage
- Indicate that employees should treat email messages in the same manner as other written business communications – with professionalism, care and confidentiality
- State that usage and access to the organisation's computer, email system and distribution lists should be restricted to its employees
- Make perfectly clear that use of the email system or internet that could be described as harassing, discriminatory, defamatory, fraudulent, obscene, indecent, embarrassing or intimidating will not be tolerated, and may lead to discipline up to and including termination
- All employees should be required to sign a form acknowledging and agreeing to the policy. Reinforcement of the policy at every opportunity is also recommended.

*Source: Information Enterprise Australia (2002) http://www.iea.com.au/web/Publications/Information_Overload_Newsletter/?newsid=51*

*The UK National Archives have also produced Guidelines on Developing a Policy for Managing Email. This is available at: http://www.nationalarchives.gov.uk/documentsmanaging_emails.pdf*

# 3  Making the change

The effective use of information can improve decision making and be developed into a competitive capability for organisations (Kennerley and Mason, 2008). However, in order to extract maximum value from the information and knowledge held by an organisation, there is a need for a structured approach to working with information, most likely supported by a number of tools and techniques. However, according to O'Dell and Grayson (2000) the right technology is only one of four critical enablers of effective KM. Apart from technology, they are cultural factors, leadership factors and measurement and evaluation factors. It is in addressing these four factors together that effective change to making informed decisions can be made.

## Technological factors

A key consideration when approaching KM is that technology has a helpful role to play, but it will not be the driver of change. Developing databases of good practices on their own rarely achieve the impact hoped for, as staff will rarely take the time to enter a practice into a database unless it is specifically part of their job. Furthermore, as noted by O'Dell and Grayson (2000), 'the really important and useful information is too complex to be put online, too much tacit knowledge is required to make a process work'. Instead, they suggest, 'effective databases are brief rather than comprehensive and are designed to enhance and support, rather than replace, existing sharing mechanisms. They can provide insights into what has been done, not 'the right answer'. In this regard, many organisations have found that directory or pointer systems, assisting people in making contact with others, can be at least as useful as a listing of good practices.

Many organisations also experience a range of further technical 'barriers' that may impact on the development of a KM system. These include poor IT literacy and lack of support in using technology.

While adopting new work systems will involve IT, their success should not be dependent on the IT department. In order to overcome these difficulties, an organisation needs to:

- Provide accessible, user friendly and joined up technologies
- Make sure people are supported in using technology
- Help people to use technology appropriately by developing acceptable user policies and protocols
- Raise the standard of IT competencies through the adoption of accredited training.

## Cultural factors

Cultural considerations, where people are motivated, supported and rewarded for sharing information, are a basic prerequisite and are the most important factor related to sharing and transfer of knowledge. Learning by involvement is far more effective than learning by communication (receiving reports, attending seminars etc.). Furthermore, it is estimated (Perrin, 2003) that as much as 80% of knowledge that needs to be transferred is not easily documented (i.e. tacit knowledge). For these reasons organisations need to actively work to promote a knowledge sharing culture.

According to Skapinker (2002), this has become more difficult in recent years, because employees feel far more insecure than they did 20 or 30 years ago. The idea of a job for life has disappeared. Most people have seen colleagues and friends lose their jobs, so why pledge all your knowledge and expertise to an organisation that has little commitment to you? In times of economic uncertainty these fears will be particularly exacerbated. Knowledge is power, and if you know something nobody else knows, the company will find it hard to get rid of you.

Addressing these issues is not easy, they strike

at the heart of an organisation, its corporate culture and impact all areas, its leadership and management approach, its human resource and employee development policies and IT. However, they are issues which organisations need to concern themselves with or they risk operating at a significantly sub-optimal level.

While there is no comprehensive checklist for creating a knowledge-sharing environment - it is a constant process - there are some items that appear to be consistent in organisations with the right corporate culture (Skapinker, 2002):

### Pride

Pride creates the sort of organisation that people are happy to boast about to their family and friends. An organisation with a reputation for ethical behaviour and the delivery of high quality products or services creates a sense of belonging among employees that facilitates knowledge sharing.

### Trust

Trust is the basis for effective participation and collaboration. Without trust people are unwilling to participate and collaborate with each other. However, building trust is not a linear progression. It is a cyclical and iterative process. To build and reinforce trust it is important to:

- Recognise that everyone has something to learn and everyone has something to share
- Champion collaborative working, recognising the role of trust in successful collaboration
- Encourage inclusion and active participation
- Get started; it can be hard to know when you have established sufficient levels of trust to initiate collaboration
- Set common and realistic objectives, start with something small and build on it.

### Look after your employees

The problem of knowledge hoarding is worse the more insecure jobs are perceived to be. While in most organisations it is not possible to offer employees a job for life, it helps to be honest about the implied contract of employment that exists between the organisation and its employee. Furthermore, organisations can offer fulfilling employment and assure people that for as long as they work with the organisation they will be given opportunities to develop themselves and learn.

### Level of resistance

Lastly, for organisations seeking to develop KM it is important to recognise that in all but exceptional circumstances some level of resistance to change will surface. Employees will need to be convinced that there are compelling reasons for change; that staying in the current situation is jeopardising the organisation and that the new situation will bring enough benefits that it is worth the journey. In this regard, good communication is fundamental. KM is all about changing people's behaviour – without the right messages, fully understood, it will be very difficult to build sufficient conviction to implement effective new approaches.

It is necessary to constantly push the need for people at all levels to take responsibility for voluntarily participating in the activity of sharing and leveraging knowledge. Managers can ask regularly what people are learning from others, and how they have shared with colleagues ideas they think worthy. Changing the reward system to encourage sharing and transfer is desirable. Leadership can help by promoting, recognising and rewarding people who model sharing behaviour, as well as those who adopt best practices.

## CASE STUDY
## Fostering knowledge sharing in organisations

Texas Instruments is a company that is extremely serious about encouraging reuse of ideas and designs by its engineers. To encourage this process the company periodically holds a contest within the organisation to collect the best story based on 'We didn't build it here but we used it anyway'. Teams within Texas Instruments scramble to come up with the best example of design re-use. They then share the story with others at an awards dinner. The stories and the activities of the company serve to foster their knowledge sharing culture.

Caterpillar Inc. is the world's number one supplier of earthmoving machinery. The organisation's strategic driver for CoP was just-in-time learning. In the past, employees attended in-class training on topics that they might or might not find relevant in their daily work. By contrast CoP provide a platform through which employees can obtain timely answers to current issues or problems. Communities at Caterpillar are very narrowly focused in order to maintain a direct relationship between community activities and daily work. The organisation has approximately 3,500 CoPs with about 40,000 unique participants.

*Source: Balboul, 2009*

## CASE STUDY
## Identifying the benefits of knowledge sharing at IBM

As with most KM initiatives, an ongoing challenge for the knowledge team at IBM is to convince people of the benefits of sharing knowledge and, as a consequence, to build it into their daily routine. In this respect senior management support and example is critical. To help ensure that this happens, a 'buddy' system was established to give managers a private opportunity to learn how to use the resources available. This is complemented by the linking of KM and sharing activities to appraisals, thereby ensuring that managers are specifically asked what they have done to enhance knowledge sharing within their teams. However, ultimately the main driver of KM at IBM is the promotion of the business case.

A core task for the KM team is to show the time and therefore financial savings which accrue through better information management and knowledge sharing. The KM team surveys users of the KM system on an ongoing basis, asking them to estimate the amount of work-time using the system has saved them. The number of hours saved is then extrapolated against the average cost per hour per employee, providing an indication of the 'dollar value' of having a KM system. In addition, 'success stories' are collected which demonstrate the different ways in which KM has supported the business.

*Source: O'Riordan (2005)*

### Leadership factors

As with most change projects, it's not essential that leaders initially endorse KM, only that they don't quash initiatives. Indeed in some organisations quite a low-key start up has been useful. However, eventually, if a new approach to KM is to blossom across the organisation, management has to take an active and supportive role.

In practical terms this may require that the leadership is itself convinced that knowledge sharing has real merit and impact. In addition, managers may have to overcome fears which they themselves have in relation to new technology, sharing knowledge etc. It also helps if they are seen to use knowledge sharing tools and participate in initiatives like CoPs.

## CASE STUDY
## Leadership buy-in at Centrica

Centrica was formed in 1997 from the de-merger of British Gas and is the UK's leading provider of energy and essential services. The following case study is taken from a report of a workshop run by Chris Collison.

As he was leaving the room, one of the directors turned to me and said, 'You know, Chris, this is good stuff, but what I really need is something practical to challenge me and remind me tomorrow morning what I need to do differently. Something that fits on the back of a postcard'.

After drawing on Centrica's knowledge-sharing network, I proposed that the director place a card on his desk containing the following five statements:

- When encountering a business problem, how can I reinforce the importance of learning from others, rather than simply providing an answer?
- How can I personally demonstrate that asking for help is a sign of strength rather than weakness?
- How do I react when someone fails? Is it purely a loss to the business or is it an investment in their education?
- When reviewing a project proposal, have I checked that it brings to bear knowledge from other projects?
- How much time in my diary this week is likely to include 'real' conversations?

Six months later, at the next executive forum, all sixty members of the top team scored themselves against these statements, and committed to refer to them on a daily basis. They have now been incorporated into the company's leadership competency framework and built into the development plans of thousands of managers around the Centrica group.

What are the next steps? Walking the talk and demonstrating the benefits though success stories must follow the positive rhetoric. A number of cross-company networks have subsequently been launched, each one sponsored by a member of the senior team. The success of these networks is critical to building commitment to knowledge sharing throughout the organisation.

*Source: Collison (2005)*

## Measurement and evaluation

According to O'Dell and Grayson (2000) there are two types of measurement issues involved in KM: 1) measuring performance to identify best practice and 2) measuring the impact of initiatives designed to facilitate the transfer of knowledge. There are challenges in respect of both areas, but both are necessary.

Clearly, evaluation is critical in order to establish what in fact is a good practice. According to Perrin (2006), information about why the superior results were obtained, how this was done and the circumstances in which this took place is essential in order to be able to act upon this information. Evaluation that provides understanding about what has happened and why is at least as important as the actual results.

The importance of context (situational and extraneous variables) in evaluating good practice is the reason why there is a danger in relying solely on metrics in benchmarking (performance league tables etc.). According to O'Dell and Grayson (2000), they can be misleading and, furthermore, there is a danger that comparisons of internal data may in fact jeopardise the sharing of knowledge through 'paralysis by analysis'.

The nature of evaluation is therefore critical, with Perrin (2006) talking of evaluation as a process rather than a product and of a learning approach to evaluation. Attempts at replication of even well documented exemplary programmes generally have resulted in disappointment. Instead the objective should be on identifying general guidelines or theories underlying a given practice and on providing ideas to consider and adapt, rather than imposing highly-prescriptive and specific approaches.

Measuring the effectiveness of KM practices can similarly pose challenges. In particular, isolating the impact of KM on performance can be difficult. One way around this is a two-pronged approach that seeks to measure both outcomes and activity (O'Dell and Grayson, 1998).

Measuring outcomes focuses on the extent to which a project or a process achieves its stated objectives. The success of the project or process serves as a proxy measure for the success of the KM processes embedded in it. In other words, KM is seen as an integral tool for improving a project or process, rather than as a separate thing.

Measuring activities then shifts the focus to the specific KM practices that were applied in the project or process. What were the specific activities and what was their impact? In measuring activities you are looking specifically at things like how often users are accessing, contributing to, or using the knowledge resources and practices that have been set up. Some of these measures will be quantitative (the number and frequency of inputs and hits to a discussion board). However, there is also a need to look at qualitative measures, for example, asking people about the attitudes and behaviours behind their activities.

In summary, with a learning approach, the objective should be on creating a culture of evaluation, where managers and staff are constantly raising questions about what they are doing, and actively searching for ways of doing things differently or better. In this way, according to Perrin (2006), evaluation can help make the promise of KM real.

# 4 Conclusions

While information is possibly the world's most valuable commodity, a problem emerges when the volume of information an individual receives and or processes has more negative than positive consequences. Current research suggests that the surging volume of available information – and its interruption of people's work – can affect not only personal well-being but also decision making, innovation and productivity.

Knowledge management is about improving organisation capability by enabling people to improve the way they work in capturing, sharing and using knowledge. It involves using the ideas of employees, customers and suppliers to improve organisation performance. Building on what works well leads to better strategy, practice and decision making.

In order to extract maximum value from the information and knowledge held by an organisation, there is a need for a structured approach to working with information, most likely supported by a number of tools and techniques. However, KM is about people changing the way in which they work and, consequently, putting in place the right technology won't of itself produce benefits for the organisation.

Cultural considerations where people are motivated, supported and rewarded for producing relevant, high quality, well presented information, which is shared appropriately, is arguably the most important consideration in respect of KM. For public sector organisations, often with traditional grade structures, silos and organisational hierarchies, bringing about this cultural change represents a significant challenge. However, not to do so means that we may not be bringing the right information and knowledge to bear on our decision making.

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THE GOVERNMENT OF THE HONG KONG SPECIAL ADMINISTRATIVE REGION