

## A-Z of Knowledge Management

Knowledge Management is one of the biggest buzz words to hit management practice in Singapore since the ISO 9001 bandwagon started four or five years ago. If, as a Training or HR Manager, you are hoping it will pass you by, you are sorely mistaken. The Singapore government is deeply committed to investing in the human capital of Singapore, and the concept of the "knowledge based economy" is almost a national mantra. Just do some sums: if the Productivity and Standards Board and the Skills Development Fund are committed to supporting half the workforce (approximately 1.2 million people) on the national Critical Enabling Skills Training (CREST) programme by the year 2003, at a maximum of \$320 per person for each of seven modules, that is a commitment worth S\$1.4 billion over 4 years.

What will it mean in practice for the average training manager? For long term survival, you will need to be better informed about the nature of likely change in your organisation and the marketplace your company works within. And because these changes involve *people*, *skills* and *experience*, the areas of recruitment, job structures, professional and skills-based education and training, are all going to come under sharp scrutiny. As some far-sighted organisations are already perceiving, the HR manager and the training manager are at the centre of an organisation's survival quotient.

Short-term, you as a manager need to survive the first, jargon-filled wave. You are going to be inundated by consultants, IT vendors, and training organisations, not to mention the HQ-based work teams, mission and vision projects, knowledge surveys, and generally confusing but persistent demands that you do something about knowledge. For some, it has started already. Treat the *ABC Guide* given below as a primer in a field that is very new. When you are tempted to panic, remember the golden rule of all management theory (the one they will *never* teach you at management school): use your common sense, never trust a consultant's judgement more than you trust your own, and listen to a lot of people before making a big decision.

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**A is for Assets** – **Assets** and **value** are at the core of knowledge management theory. The clearest general definitions of knowledge management state that *KM is the deployment of knowledge to add value to the enterprise*. Supplementary definitions might speak of using knowledge systematically to further the strategic objectives of the organisation. One of the core puzzles of knowledge management is how to define the *value* of knowledge assets. Capitalist models of business define assets only in tangible, quantifiable terms. Even share value, which is subject to the very *intangible*

influences of market confidence, can conveniently have their intangible risks forgotten, and be given a dollar price at any given point in time. Much of the debate surrounding knowledge management theory is about how to assign tangible value to intangible knowledge assets, much of which resides in the heads of key employees (see **Tacit Knowledge**). One of the favoured (because simple) models is to state that the actual value of knowledge assets is equivalent to the difference between the book value of an enterprise and the market value of the enterprise. Proponents point to the enormous differential between book

value and market value in internet, e-commerce and software companies to justify this claim. A logician would find gaps in reasoning here – it seems counter-intuitive to assign tangible value to *intrinsic* assets based wholly upon *extrinsic* (and intangible) opinion. The debate is, however, far from over, and various measurement models of greater and greater complexity (requiring high consulting fees for their application) are being developed. It is a critical issue: if knowledge projects, processes and products are to attract investment and be properly managed, tangible value needs to be assigned, predicted, and measured.

**B is for Balanced Scorecard** – The Balanced Scorecard is one of the measurement tools being touted as a potential guide to the determination of value. The Scorecard focuses upon the tracking of business processes, benchmarked against strategic goals. To this extent, it is a valuable tool for applying knowledge within the organisation to gear processes in a managed way towards strategic directions set from the centre. The model also provides for strong feedback loops that allow modification. (See Robert S. Kaplan and David P. Norton, *The Balanced Scorecard: Translating Strategy into Action*, 1996). While this model is a good measurement tool for tracking progress against objectives, and is now starting to extend its influence into performance management, it does not really work as an absolute measurement of *value* for knowledge assets.

**C is for Chief Knowledge Officer** – Most knowledge management theorists agree that knowledge management strategies fail unless they have support from the top. This is a bad sign. First, it implies that the organisation will find the transition to a knowledge-managed environment an

*unnatural* (and potentially disruptive) transition. Second, all those companies that think they have satisfied the trend by appointing middle managers to Knowledge Manager posts, are not in line with the consensus about how to implement a strong knowledge management strategy. The organisations that appoint a Chief Knowledge Officer gain the most approval. But what is a CKO supposed to *do*? And how is his/her success to be measured? There has been little guidance to date, and all eyes are on the brave pioneers in the field. Even here, there is little consistency. Some are managers of the company's decision making and strategic thinking process. Some are effectively chief learning officers. Others are glorified intranet managers. The role is most common in IT and in consulting, and probably the best guidelines around come from the consulting field. (See Stowe Boyd's article in *Knowledge Management Review*, Sept/Oct 1998).

**C is also for Communication** – Communication is at the core of knowledge transfer within organisations. Without it, you would only get minimal transfer of knowledge between explicit and tacit between people and teams. Knowledge management theory over the past year or so has split broadly into two main schools: those that emphasise *data capture* and communications *technology* and those that emphasise the "soft" skills-based aspects of company culture and how *people communicate* within it. *See also Culture*. In fact, it is not necessary to create such a rigid division. Technology does provide greater ease and spontaneity in communication within and between organisations, their customers and partners. Email is a good example. The semi-rigid formalities of business correspondence have gradually been eroded by the technological availability of faster and

more time-sensitive communications: the growth of fax in the 1980s already prefigured this, and email as a global phenomenon is less than five years old. There are still no formal standards for email correspondence and there probably never will be, at least to the same degree as the *Model Business Letters* genre. Why not? Although the immediacy of email means that the documentation of business transactions is often badly pitched, splintered and decontextualised, it is a powerful humanising force in business communication, and simulates many of the personal features of human communication: spontaneity, informality, rapid response. Apart from the ICT infrastructure, however, knowledge management experts look to organisational structures, openness of communication within the company culture, and the strength of teams across the company.

**C is also for Consultants –**

**Consultants** are important in the growth of knowledge management for two reasons. First, because they are the quintessential knowledge workers. Consultancies create value out of the knowledge of their workers, and that is how they make money. The insights they have, and the systems they set up are usually pretty interesting role models for the less knowledge-oriented company. However, (this is the second reason) precisely for that reason, consultants have a vested interest in hyping up knowledge management, sometimes beyond its true level of appropriacy for the client company. There is a whole raft of articles in the business and management press about the dangers of over-reliance on consultants – be especially cautious when the project is one that serves the consultant's cause better than your own. *See also Fast Money.*

**C is also for Culture –** Company culture attracts the attention of the

knowledge manager because it is this that determines the quality of communication between workers, as well as the quality of communication and knowledge flow from customer back up into the systems and product systems. For this reason, **Teams** are also a key focus of knowledge management thinkers, especially cross-functional and cross-divisional teams. Culture also receives attention because if knowledge management is to be successful, many organisations require deep changes in information handling and navigational skills, as well as deep changes in attitudes towards the role of knowledge. The organisational culture needs to be examined at two levels, therefore: at the level of whether it is ready to absorb knowledge management attitudes and practices; and at the level of how effectively communication and knowledge transfer happen within the organisation.

**C is also for Customer –** An example of knowledge management success comes from embedding information about your customers into your products. Gillette, for example, has just finished an enormously successful twelve-month global rollout of its *Mach 3* triple-edged razor. The prototype *Mach 3* razor was already on the workbench in 1993. The branding and marketing of the product took another five years and the best part of US\$750 million in consumer research, focus groups and customer testing. If you know, as Gillette found, that most men take between 100 and 500 strokes to shave, the message of "the closest shave ever in fewer strokes – with less irritation", if it is built into a shaving product, is going to be irresistible. Customer knowledge embedded in products results in the appealingly titled "Killer Application" – the product which your customers effectively design, the product which they cannot help but buy.

**D is for Data** – Data is the most primitive form of information without context. Data alone is of little use. It needs to be given a context in order to become information. It needs to be given an application that gives value in order to become knowledge. The storage, organisation, use and transmission of data underpin many knowledge management strategies. A **database** is a structured collection of data objects, often expressing simple relationships between data objects. **Data mining** is a process which imposes pre-structured search processes on enormous collections of data in order to extract common patterns. It is most commonly used to analyze data and extract information about trends, and common patterns. It could be used to gain accurate perceptions of customers and develop marketing strategies that are closely geared to common preferences, or it could be used to analyse processes at a very high level of detail in order to fine tune them. **Data warehousing** is a process which stores large collections of information in pre-structured and pre-organised forms. It is essentially pre-digested, and ready for consumption on demand. It is most typically used by consultants and analysts who require rapid access to relevant briefings and information on given topics. Software providers in knowledge management are now working on **metadata** software. Metadata works like a data warehouse except that it records what information and knowledge is used for and what value it has had, each time it is accessed for use. The warehouse therefore becomes "smart" and the knowledge management system learns how to prompt enquirers only with the most useful information first.

**E is for Explicit Knowledge** – see Knowledge

**F is for Fast Money** – More than half the resources and written material on knowledge management (much of it on the internet) is produced by software houses. About 30% of the rest comes from management consultancies, and only about 20% is serious, academically sound management thinking. Why are software houses and consultancies rushing in ahead of mature perspectives on knowledge management? Fast money. Given that the software houses are selling products several years ahead of the thinkers, and the consultancies are experimenting in large organisations before the discipline is properly developed, we can expect many serious shortfalls before many organisations can point to successful knowledge-based strategies and practices. **F is therefore also for Fools Rush In.**

**G is for Strategic Goals** – Knowledge management has no significance unless it adds value to business processes, products or infrastructure. Knowledge management must enhance the organisation's strategic goals. The pursuit of knowledge management must therefore start with a statement of strategic goals, and only then can managers determine the appropriate deployment of knowledge to serve those goals.

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**G is also for Group** – The notion of the group has special influence in knowledge management, both in terms of how people interact (*See Teams*), but also in how networks and software applications support groups working together and sharing knowledge. Key terms in the software industry: **Groupware** (eg Lotus Notes) where members of a team can share documents in common and work on them simultaneously across a network and **Group Memory Technologies**, emerging software developments that seek to capture and make accessible across a network the most valuable and most commonly applied knowledge. *See also Data and Reservoir.*

**H is for Human Capital** – Human capital refers to the intangible value of the human assets in the employment of a company. This can include knowledge, experience, skills, relationships and networks, as well as the historical investment in recruitment, induction, training and development. One of the issues posed by knowledge management theory is how to quantify and measure this value as a tangible, measurable asset. *See Assets.*

**I is for Information** – Information is raw data with some form of context. *See Data.*

**I is also for Intellectual Capital** – Sometimes confused with human capital. Intellectual capital, however, refers to a different set of categories. It can include the tacit knowledge held within the heads of employees, but it can also include explicit knowledge codified in patents, processes, databases and knowledge artefacts, as well as the customer or partner relationships more often associated with the concept of brand.

**I is also for IT/IS** – Information technology and information systems play a prominent role in knowledge management because through communications, data networks and sophisticated information processing, they can effect local or global knowledge transfer at great speed and in great quantities.

**J is for Jobs** – Jobs are being re-defined in terms of their relationship to knowledge management. Secretaries, the original knowledge workers of the European Renaissance, who were industrialised by the invention of the typewriter in the 19<sup>th</sup> century, and then liberated by the personal computer, are now finding themselves at the centre of such a redefinition: a recent survey in the United Kingdom found that almost 90% of senior secretaries have seen their roles change "dramatically" within the past five years, with longer hours and greater influence. More than half manage their own projects. Their job title? *Executary*. The nature of job hunting is also changing. More and more job opportunities are being posted and filled online; applications for many jobs are now completely electronic; resumes for jobs in Silicon Valley are expected to document failures as well as successes, and the lessons learned from those failures (*see <http://www.vjf.com>*). *See also Migration and Roles.*

**K is for Knowledge** – The phenomenon at the heart of knowledge management is also the least well defined. Everything has a claim to being knowledge – some of the triumphs attributed to *knowledge* were only a few years ago being laid at the door of *information*.

The key difference, where experts seem to agree, is that *Knowledge is the application of information to create some form of value*. That is still pretty broad, and covers a multitude of sins as well as virtues. The key guideline for knowledge managers is (1) to start with strategic goals and desired outcomes, (2) work out the bits where the application of knowledge can advance those goals, (3) do it.

**L is for Learning** – Many exponents of the learning organisation find useful points of contact with knowledge management theory. Learning organisation theorists and practitioners are especially well-equipped to examine the issues surrounding the movement of knowledge from tacit (inside people's heads) to explicit (either documented, or embedded into business processes and systems) inside the organisation. Learning organisation consultants were among the first on the knowledge management consultancy scene. See also **Migration**.

**L is also for Librarian** – Librarians are probably the best-trained knowledge managers around. Their roles too are being re-defined; fifteen years ago, company librarians were being re-named Information Officers. Now they are coming back full circle, and being designated Knowledge Managers.

**L is also for Loyalty** – Peter Drucker's definition of the knowledge worker points out that their loyalty is primarily to themselves and to their career development, rather than to their current host organisation. Encouraging and maintaining loyalty in one's workers is therefore a new challenge for knowledge-based companies. In the United States, stock options as part of the employment package are widely used as loyalty-bonds,

particularly in the knowledge-intensive software industry. Corporate sponsorships for further qualifications and learning, and even corporate universities, are on the rise. See also **Migration, and University**.

**M is for Measurement** – Measurement is especially important for knowledge management precisely because the target of all this effort, knowledge, is so *intangible*. Knowledge management theory requires investment – whether it be in terms of better IT and communications infrastructure, re-structuring the company, better data and information systems, expensive training or simply expensive consultants. That's a big price tag for something you can't measure. See **Assets** above for some of the issues involved in putting a tangible value to knowledge, and in measuring the positive effects of a knowledge strategy.

**M is also for Migration** – Knowledge migration is an essential part of the management of knowledge. Migration can be both internal as well as external. Internally, the issue is the transition from tacit knowledge to explicit knowledge within an organisation. This can mean (a) good communications between colleagues - this spreads around the tacit knowledge and experience individuals hold in their heads; (b) induction, training and continuous learning which allows the corporate knowledge and experience to be passed on to the individual worker and internalised; (c) capture of individuals' knowledge and experience in a knowledge reservoir. External migration refers to the task of managing the migration of skilled workers and talent between companies and organisations is becoming a significant part of business strategy.



## "Knowledge migration is an essential part of the management of knowledge"

**N is for Network** – Networks, both human and technical, sit at the heart of a knowledge strategy. The technical one is the easiest to implement. Though it may be the most costly, it is the easiest to measure, in terms of input and output. The human networks are less tangible and much more difficult to manage. Some aspects can be considered issues of **Communication** or **Culture** within an organisation.

Others, however, involving networks of partner-client-customer relationships, can form part of the **Human Capital** of an organisation, and they are especially difficult to quantify. More significantly, large chunks of this kind of network value can also migrate with their "owners" should they leave the company.

**O is for Organisation Theory** – Organisation theory will play a large role in the development of knowledge management over the next couple of years, largely because of the importance of culture, teams, and networks. Old, highly structured models based on the division of labour are being discounted as inappropriate, and new models are constantly being explored. The theme of *ecology* is one model that gains support because it does deal with complex inter-relationships, exchanges and interdependencies. *See also Zoology.*

**P is for Productivity** – Recent writing on knowledge management, started by Peter Drucker, has noted that knowledge workers may actually be experiencing declines in productivity as a result of the KM focus on improving communications and team working. Jeffrey Pfeffer and Robert Sutton in the May/June 1999 issue of *Harvard Business Review* speak of the "smart-talk trap" – referring to the natural human instinct to *talk about* things rather than *do* things. Managers in particular often think that they have dealt with a problem simply by having a meeting to talk about it. Productivity is going to be a key issue in knowledge management thinking. One approach to a solution might well be in defining roles within organisations more tightly. *See also Roles.*

**Q is for Questions and Answers** – Knowledge management is still in a very early phase, and still focuses primarily upon data and information. One of the areas urgently in need of development is how **knowledge activities** such as questioning, thinking, learning and creativity skills become embedded in an organisation in such a way that they feed directly into the fulfilment of corporate objectives.

**R is for Roles** – New skills are needed in the knowledge-oriented organisation – information navigation, management and handling skills, as well as new approaches to communication and transfer of knowledge. But new *roles* will also be needed, and it is only now that this is being realised. For example, for the effective gathering of knowledge in today's environment of information excess, you need roles that correspond to knowledge navigators, hunters and gatherers, supported by "editor" or "publisher" roles to formulate the raw information brought in, and digest it in line with the given strategic intent or project. Given a strong emphasis on a culture of **Communication** and concerns about knowledge worker **Productivity**, you will also probably need roles which project manage, set deadlines and success markers, to keep the knowledge enterprise on track. Few of these roles exist in any highly evolved form in today's organisations. How do they come about? By training, professional education, and conscious changes to recruitment policy. Job descriptions and training programmes are both going to have to change pretty dramatically in the company that wishes to become truly knowledge-oriented.

**R is also for Knowledge Reservoir** – The concept of a reservoir of knowledge that captures all the tacit knowledge held in the heads of

employees is gaining strong ground in knowledge management, and software houses are working madly on applications which will provide "just-in-time" and "just-right" knowledge whenever a mission-critical decision requires it. Nobody has quite got there yet, and the best examples of knowledge reservoirs are presented in **data warehousing** and **meta-data** software applications (*See Data*).

**S is for Software** – Software houses, need we say it, are going crazy. Even fairly nondescript desktop packages for home PCs are touting themselves as "document management systems". Unfortunately, unless you spend a really enormous amount of money, you are unlikely to come up with anything that manages knowledge any better than you and a good filing system can. Don't buy anything unless you know someone who has been using it for a while, can explain how it works in words of no more than two syllables, and *likes* it.

**S is also for Strategy** – Knowledge Management is a waste of time if you haven't sorted out your strategy first, and then worked out what role knowledge has in it. *See Goals*.

**T is for Tangible Assets** – *see Assets*.

**T is also for Teams** – *See Communication, Culture and Roles*.

**T is also for Training** – Training and professional education are critical to the success of any knowledge strategy, simply because the skills and roles needed in a knowledge-based environment are so new. *See Roles and University*.

**U is for University** – Universities and business schools have traditionally been the training grounds for managers. Increasingly, universities have had to become more flexible in

their provision, witnessed by the surge of growth in acceptance of distance education over the past ten years. However flexible they have become, their format and context are now being challenged from outside. More and more multinationals are setting up *corporate universities*, which gear their professional training and development much more closely to the strategic needs that they foresee over the next few years. They can gear their curriculum very closely to changing trends, and have the advantage of speed of response over the traditional, independent school. Perhaps more significantly, they can also in this way, tie their human capital more closely to themselves, and enhance the **Loyalty** that comes under so much risk in a knowledge-based economy.

**V is for Value** – see **Assets**

**W is for Work** – see **Jobs**

**X is for X Files** – Sociologists believe that the "X Files" has been so successful simply because it refused to tell the whole story. The tantalising glimpses of mysterious aliens without ever becoming explicit, coupled with the motto "The Truth out there" boosted ratings worldwide. When aliens became accepted as part of the story, the "outing" of the truth caused ratings to fall. The fact is, we love a mystery, and this is why knowledge management has attracted so much attention: it is focussed on the invisible, the intangible, and it challenges us to measure knowledge and give it value. Knowledge is, by nature, highly contextual, and very unpredictable in terms of its value in any given situation, so it is unlikely we shall succeed absolutely in our quest to measure and evaluate. We may never get to "the Truth" and that may be just as well. However, we may gain some useful tools for doing things better along the way. Let's just not get carried away.

**Y is for Youth** – Many people believe that the knowledge-based economy is going to favour the young. IT-literacy is a key component, and young people generally pick up information gathering and navigational skills much better than habituated older folks with deep-seated attitudes to the way that things ought to be done. However, it would be dangerous to ditch several of the key value-adding components in gathering knowledge and applying it: experience, and wisdom. The ability to set things in a context, discern a range of realistic and possible outcomes, and form balanced judgements, are all things that come with experience and age. The most successful enterprises will be the ones that manage to balance the communication and knowledge transfer across generational gaps as well as across functional gaps.

**Z is for Zoology** – Organisational theorists are increasingly arguing that zoology, biology and ecology offer better examples than the machine/system model of how the knowledge-based organisation should work. Thomas Davenport's *Information Ecology* (1997) was a pioneer in the field, and Yogesh Malhotra, a leading exponent of "knowledge ecology" argues that the industrial age's focus on infrastructure ignores the important aspects of human interaction and interdependence. (See <http://www.brint.com/papers/ecology.htm> ) At the level of the general business environment, one of the strongest current descriptions of the "business ecosystem" is James F. Moore's *The Death of Competition* (1996). See also **Communication, Organisation Theory and Network**.

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