



Foundations for knowledge management*

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*Based on a paper delivered at the Annual Conference of the American Society for Information Science, Washington, 31 October-4 November 1999.

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1. A Jackdaw's nest

The succeeding management fashions that organizations have run through, in attempting to sort out what to do with that ill-defined entity 'information', bring to mind the image of a jackdaw's nest: adorned with gaudy new catchphrases picked up here and there, carried back and stuck into a chaotic structure, among the faded and tattered remnants of older ones.

The current popularity of Knowledge Management (KM), which has now been with us for about three years, offers a unique opportunity to pause, invest in some fundamental thinking, dismantle the clutter, ask some apparently simple questions and use the answers as foundation for rebuilding something more functional, as well as aesthetically pleasing.

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2. Why we need to think about foundations

The opportunity should not be missed, because knowledge is the foundation of our humanity; it is hardly possible to find anything more fundamental or more precious. To be deprived of it - by disease, accident or disaster - strikes at the foundations of individual and collective identity.

What makes human beings unique is the ability to structure and manage what we know in our heads, to transform and communicate it to others, and to use it as the basis for action to achieve goals - in the course of which we create new knowledge. It is the basis for the extraordinary rapid development of human societies - in a time span that is a near-invisible dot in the grand line of geological time.

Yet, when we come to talk about managing knowledge in the groupings of human beings called organizations or businesses, that unique and powerful quality of knowledge is barely mentioned. As with 'information' and information technology, embedding the word 'knowledge' in a portmanteau phrase seems to have diverted attention from the key idea, and effectively prevented thinking about its real significance. So most thinking about KM takes the knowledge element for granted, just as the idea of information has for so long been subsumed in the technology. How many organizations currently committed to KM, and graced with Chief Knowledge Officers, have even tried to work out what is the knowledge that is to be managed? Yet how can we begin to manage knowledge without first defining what is of importance and of value in achieving our goals? For that is what determines the knowledge we need, and the ways in which we need to use it.

Instead, what we see all too often is managements who have swallowed a fashionable phrase and repeat it without understanding, because they want to keep up with the competition, but are ill-prepared and/or unwilling to do the necessary thinking. The bandwagon on to which they have jumped is pushed profitably along by management consultants and IT vendors, selling 'solutions' to problems which neither they nor their target customers have defined.

Some of those 'solutions' are old products re-badged, like data mining now appearing under the pseudonym of 'knowledge discovery in databases'. Do-it-all technological solutions are advertised in such terms as 'powerful underlying technology architecture offers automatic knowledge acquisition, concept and context analysis, and discovery'. 'Intelligent agent software' is claimed to have 'potential to make knowledge management a painless and even effortless process' (by monitoring your employees' computer screens and building up a profile of their areas of interest and expertise) 'without any human involvement'.

The current trend is to suggest that KM problems can be dealt with by Web technology; this morning's post has brought a leaflet for 'Knowledge management & Intranet solutions' - an exhibition that 'offers the only dedicated opportunity to explore all the very latest KM products and services' - Management Information Systems, software and services, databases, Intranet solutions, groupware and communications software, which will ensure 'that you have the tools to put you a step ahead of the competition'. (To be fair, there is a 'Parallel Knowledge Management Conference' offering the awe-inspiring thought of 'more CKOs under one roof than ever before'.)

Well-documented failures from bolting technology-led 'information' solutions on to an existing mess, without thought being taken, show that the outcome is usually a bigger mess (see, for example, Ewusi-Mensah and Przasynski 1995; Collins 1997; Farbey *et al*:1995). Taking the relationship between human beings and knowledge as a mechanical one is liable to have this result. A recent brochure for a KM conference sought to attract takers with a picture of a human head with a key being inserted into its forehead - just in case we couldn't visualise the metaphor of 'unlocking corporate knowledge'. The image is in fact far from being at the leading-edge; a satirical version appears in a 17th century German woodcut (reproduced in Carroll 1990), which shows the legendary Nurnberg funnel in action, a device 'said to make people wise very quickly' by pouring in the right knowledge. A cheerful looking subject sits in a laboratory as two learned gentlemen in gowns and ruffs pour knowledge into his head. It is sad to reflect that, three centuries on, there are those who are ready to take the Nurnberg funnel seriously.

3. So what does KM mean?

Having argued that KM is too often adopted as a slogan or a technology-led fix, without fundamental reflection on its real meaning, it is now necessary to try to state what real knowledge management deals with. If KM means anything, it has to be concerned with:

- What people need to know to act successfully in their organization's interests
- The collective knowledge base
- Maintaining, safeguarding and developing knowledge resources to meet emerging needs
- Applying knowledge effectively
- Transforming it into information to make it accessible
- Respect for the knowledge rights of both individuals and organization
- Systems and technology to support people in using their knowledge
- The value which the use of knowledge contributes to the assets of the organization.

The next thing to say about it is: that knowledge lives only in human minds; for knowledge to exist, there has to be a human mind to do the knowing. It follows, then, that:

- The individual humans who have knowledge in their minds are the first people who have to manage it.
- Therefore organizational KM means managing so as to support people so that they can use what they know and
- that means managing information strategically.

To make clear this chain of reasoning, with its implied connection between knowledge and information, we need to establish both the distinction and the indissoluble connection between knowledge and information, for they are indeed 'two distincts, division none' (Shakespeare, *The Phoenix and the Turtle*), each dependent on the other; neither of much use without it.

Knowledge is what human beings store in their heads about things that are important and of value to them; they use it to guide their actions to achieve what they want. It can't exist without human minds - no mind, no knowledge; and human minds aren't much use without knowledge.

Human minds and the knowledge they contain also need 'food', taken in from outside to keep the knowledge healthy and fit for use. Information is the food which we take in for that purpose; it is audible or visible, in the form of speech, print on paper, or electronic media, and what constitutes information for each of us depends on the kind of knowledge that is valuable for each of us. So information, for individuals and for organizations, has to be defined in relation to the knowledge they need in order to do what they seek to do.

The link that binds information and knowledge is the fact that human beings are constantly transforming one into the other. Until we have transformed our knowledge into information and put it into the outside world, we are the only people who can get at it. When we have transformed it into information, by telling other people about it in speech or writing or graphics, they can take in whatever is important in it for them, by transforming it to knowledge and making it their own, so that they can use it.

Information has no value until human minds have transformed it into knowledge and used it, and knowledge loses its strength and value unless it is kept nourished with appropriate

information. So if we are to manage knowledge successfully, we have to manage the information that is essential for keeping the knowledge healthy.

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4. Practical steps to laying foundations for knowledge management

If we accept this definition of the proper concerns of knowledge management, what practical steps does it imply for establishing the process on a sound and continuing footing? I find the image of a triangle inscribed in a circle a helpful one in visualizing the necessary interactions between the organization, the people in it, and the knowledge and information they need for achieving their, and the organization's, goals. The circle represents the containing organization, its circumference is both a boundary and an interface with the environment in which the organization operates and on which it depends. People, knowledge and information are the three points of the triangle, and the sides represent their interactions. I know this is a crude and simplified representation; it fails, for instance, to capture the essential interactions among people over knowledge and information, but it serves to make the point that KM means managing in such a way that people, knowledge and information support each other, and that in doing so they create movement and change which takes the organization in the direction it seeks to go.

The foundation for managing this rich combination of people, their knowledge and the information necessary to feed their knowledge and keep it in good health needs to be a strong one - not least because the human minds that create knowledge and keep it alive come 'bundled' with human nature and all the associated eccentricities, personal agendas, individual and group values, and feelings. Establishing it usually means seeking to change at least some aspects of organizational culture, and that process cannot be an instant, or even a rapid, one.

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5. What every organization needs to know

As a starting point, here are some simple propositions, in this case for what every organization needs to know about, and the know-how it needs. To stay alive and prosper, any organization, whatever its business and its goals, needs to know:

What is happening:

- Inside its boundaries
- In the 'outside world' on which it depends for its livelihood
- How to:
 - recognize, interpret and act on significant change, within and without
 - create appropriate 'offerings' of products and/or services for its outside world
 - communicate, internally and with the outside world.

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6. Three questions to ask and answer

To put flesh on these bare bones, any organization that wants to get serious benefit from KM has to do some serious thinking. For a start, it needs to ask and answer three questions about itself, bringing to bear the combined knowledge and experience of key people in different areas of the organization:

1. What do we need to know to succeed in what we aim to do?
2. What information do we need to support that knowledge?
3. How do people need to interact in using knowledge and information - inside the organization, and with our outside world?

This approach has the advantage of being a low-cost initiative requiring only thinking time and a willingness to make the mental effort. It can be an opportunity for information managers to take a lead and sell an educational process that is securely grounded in corporate objectives; and the simplicity of the questions makes them not too difficult for managers who are not information specialists to grasp. Personal experience shows that to produce a 'starter', which acts as an example and a framework into which others can put their understanding and knowledge, takes only a few hours, and it is time well spent.

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7. The organizational 'knowledge market'

The answers from a group of people with various 'takes' on the organization provide a sound basis for starting to develop a knowledge and information management strategy that has real meaning in terms of what the organization is trying to do. The answers about necessary interactions - which are always the most taxing to develop and the most illuminating - make a realistic foundation for what is usually referred to as 'knowledge sharing'. This has always seemed to me an amazingly vague and optimistic term, especially in the mouths of managers dedicated to hard-headed competition and the like; there is about as much hope of selling it in the average organization as there is of persuading a roomful of egotistical three-year-olds that it's nice to share toys. Informed and honest negotiation, in the framework of what Davenport and Prusak (1998) call the organizational 'knowledge market', seems much more realistic and attainable.

The key features of knowledge markets as they envisage them can be summarized in these terms:

- How well they work depends on the culture and political realities of the organization
- There are three roles available, and most people play all of them at different times: 'buyers', 'sellers', and 'brokers' (the last includes information managers)
- The price system embodies three factors:
 - Reciprocity - both parties to a deal give and get something of comparable value to them
 - Repute - one party gets information of value, the other gains or adds to his/her reputation (intangible, but real, value)
 - Altruism - willingness of one party to give to help the other do something important to them, without immediate return - perhaps with elements of casting one's bread upon the water (information professionals are likely to recognize the real existence of this factor).
- Mutual trust is a winner, and that cannot exist unless
 - there are visible rewards
 - trust prevails everywhere
 - and it starts from the top.
- Use IT wisely. Don't try to force fluid knowledge into rigid data structures; instead, use IT to provide an infrastructure for

- moving knowledge and information
- building virtual knowledge marketplaces.
- 'Managers shouldn't underestimate the value of talk'
- Physical knowledge marketplaces are necessary too, and so is time to 'shop for knowledge'.

It is encouraging that authors with such wide experience of businesses advance these ideas (see also Johannessen *et al.* 1997). And it is in this kind of framework that the IT solutions on offer can start to make sense and earn their keep.

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8. Knowledge obligations and principles (KOP)

The concept of the knowledge market as set out by Davenport and Prusak (1998) implies a foundation of accepted obligations, rights and principles within the organization.

Knowledge obligations

The organization's obligations towards the people who work in it:

- Respect knowledge in the minds of people as their own permanent property
- Organize work so that people spend the largest possible amount of their working time using their knowledge at the highest level
- Provide support, education and training to enable those who work in the organization to meet their knowledge obligations.

And the reciprocal obligations of those who work in the organization:

- Be aware of what they need to know to do their job and of the information needs of those with whom they interact in their work
- Use information to keep their knowledge fit to support their work
- Interchange information and knowledge with colleagues and people outside the organization to help it achieve its aims
- Manage conscientiously resources of information for which they are responsible
- Make their knowledge available to the organization's knowledge base.

Knowledge principles

An undertaking on these lines:

We will:

- Define
 - the knowledge we need to achieve our goals
 - the information we need to maintain it
 - how we need to use knowledge and information
- Keep the definitions up to date as our goals develop and change
- Audit our use of knowledge and information regularly
- Ensure that we acquire and create the information we need to support our knowledge, and manage it effectively
- Provide for a coordinated overview of our total resources of knowledge and

information

- Maintain an infrastructure of systems and IT to support management of information resources, and interactions among people in using knowledge
- Use knowledge and information ethically in all our internal and external dealings, to preserve and enhance our reputation.

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9. The parable of the talents

Setting the approach towards KM in this context offers gains for organizations and the individuals in them, which are reminiscent of the parable of the talents.

For organizations, knowledge can be brought out into the open, interchanged and traded to grow new knowledge that will support innovation, competition, entry to new markets and new products; while information resources can be managed profitably to support the growth of knowledge.

For individuals the rewards on offer are recognition of the value of their own knowledge, a chance to grow it in creative collaboration, more control of their own destiny, and the satisfactions of win/win interactions over information and knowledge. (Readers of Nonaka and Takeuchi 1995, will recognize the influence of their metaphor of the 'spiral of organizational knowledge creation'.)

If, on the other hand, organizations take the short cut by investing in the technology, but not in the thinking time essential for achieving the necessary understanding to make good use of the IT 'solutions', there are dangers - for them, and for the whole valuable idea of KM:

- KM could go the way of many other 'silver bullets' - oversold fashionable management solutions, fragile and vulnerable to the next wind that blows, which have ended in death by disillusion.
- Good KM initiatives can be vulnerable to changes brought by external and internal politics. A case study from a large financial institution (Orna 1999:293) tells the story of an imaginative KM programme that was killed when its chief management sponsor resigned at a time of major structural changes, reorganizations and cost-cutting initiatives. There seems little chance of a return to KM initiatives in that organization.
- Unthinking adoption of KM by top management as the latest idea can, paradoxically, pose a threat to information management, just as the idea has begun to take root, on the premise, that 'Now we manage knowledge, so managing information is an old-fashioned activity that we can stop bothering about'.
- There is an alternative danger from the side of the information professionals, and from educators in the field, who can dismiss knowledge management as just a fashionable dressing up of traditional library skills, not requiring any new thinking. It is already too common for information professionals to be 'left behind the door' and ignored when interesting information developments are taking place in their organizations. If they and the people responsible for their education were to believe that knowledge management was either nothing new, or new but none of their business, the result could be further side-lining and professionals capable of a valuable KM role still more restricted to lowly situations.

The approach advocated here takes time, but that is an investment well worth making to

ensure that KM will 'stick' and succeed, especially if it can be combined with small 'quick win' projects that demonstrate the benefits. When the author conference presentation on which this article is based, she was asked about 'tricks' that information professionals might use to win support for the advocated approach. The author related the following success story (it appears at length as a case study in Orna 1999):

The setting is the rather unlikely one of a police force in an English county. The initiating actors were a police officer and his senior manager. It started when the officer was made responsible for a project to rationalize retention schedules for archiving documents. Without ever having come across information management, he recognized by virtue of thinking from first principles that this was a problem of information acquisition, retrieval and use, and of the contribution that information contributes to other processes. His senior manager, the project sponsor, encouraged him to read further and to produce a paper arguing that the police force needed a strategy to address how it should use information to achieve its business aims - a pioneering proposal for the police. With continuing support from the sponsoring manager, the ideas were discussed by a high-level 'Information Management Steering Group'. There ensued what looked like protracted pause, with a lot of talking but no apparent action, but which in fact allowed influential managers to take ownership of new and significant ideas and incorporate them into their professional knowledge.

Meantime, the officer who had launched the ideas about information was sent to do a part-time MSc in Information Science. Action started with the creation of an expanded Information Services Department, bringing together a range of information functions and headed by a Director from a business background, who combined information systems and information management knowledge. A brief statement of information policy principles was adopted, and an information auditing initiative began - managed and carried out from within the force, with external consultancy support and training. Projects proposed and managed by staff themselves were carried through with demonstrable benefits, leading to useful changes and the further spread of relevant ideas.

The cost of the audit projects in terms of staff and external consultancy time amounted to about 0.8 per cent of the force's annual IT budget - a useful demonstration that thinking time is indeed a low-risk high-yield investment.

A knowledge programme is now being built on those foundations, and the officer who discovered information for himself in tackling a retention schedule problem is Knowledge Programme Manager (see Miles 1999 for a personal account from the inside).

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ISSN 1560-683

Published by [InterWord Communications](#) for the Centre for Research in Web-based Applications, Rand Afrikaans University