

Knowledge Management

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Knowledge Management ('KM') comprises a range of practices used by organisations to identify, create, represent and distribute knowledge. It has been an established discipline since 1995 ^[1] with a body of university courses and both professional and academic journals dedicated to it. Most large companies have resources dedicated to Knowledge Management, often as a part of Information Technology or Human Resource Management departments, and sometimes reporting directly to the head of the organisation. As effectively managing information is a must in any business, and knowledge and information are intertwined, Knowledge Management is a multi-billion dollar world wide market.

Knowledge Management programs are typically tied to organisational objectives and are intended to achieve specific outcomes, these can include, improved performance, competitive advantage innovation, lessons learnt transfer (for example between projects) and the general development of collaborative practices.

One aspect of Knowledge Management, knowledge transfer has always existed in one form or another. Examples include on-the-job peer discussions, formal apprenticeship, discussion forums, corporate libraries, professional training and mentoring programs. However, with computers becoming more widespread in the second half of the 20th century, specific adaptations of technology such as knowledge bases, expert systems and knowledge repositories have been introduced to further simplify the process.

Knowledge Management programs attempt to manage the process of creation or

identification, accumulation and application of knowledge across an organisation. As such Knowledge Management is frequently linked to the idea of the learning organisation although neither practice encompasses the other. Knowledge Management may be distinguished from Organisational Learning by a greater focus on specific knowledge assets and the development and cultivation of the channels through which knowledge flows.

Frequent Knowledge Management practices include:

- Enabling organisational practices, such as Communities of Practice and corporate Yellow Page directories for accessing key personnel and expertise.
- Enabling technologies such as knowledge bases and expert systems, help desks, corporate intranets and extranets, Content Management, wikis and Document Management.

The emergence of Knowledge Management has also generated new roles and responsibilities in organisations, a burning example of which was the Chief Knowledge Officer. In recent years, Personal knowledge management (PKM) practice has arisen in which individuals apply KM practice to themselves, their roles and their career development.

Knowledge Management has also been linked to knowledge manipulation - the creation, dissemination and use of knowledge are instrumental (Land, Nolas, Amjad). Hence actual knowledge management may constitute a kind of malpractice in which what purports to be knowledge is created to achieve an effect, such as the false accounts presented by ENRON.

Approaches to Knowledge Management

There is a broad range of thought on Knowledge Management with no unanimous definition. The approaches vary by author and school. Knowledge Management may be viewed from each of the following perspectives:

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- Techno-centric: A focus on technology, ideally those that enhance knowledge sharing/growth.
- Organisational: How does the organisation need to be designed to facilitate knowledge processes? Which organisations work best with what processes?
- Ecological: Seeing the interaction of people, identity, knowledge and environmental factors as a complex adaptive system.

In addition, as the discipline is maturing, there is an increasing presence of academic debates within epistemology emerging in both the theory and practice of knowledge management. British and Australian standards bodies both have produced documents that attempt to bound and scope the field, but these have received limited acceptance or awareness.

Schools of Thought in Knowledge Management

There are a variety of different schools of thought in Knowledge Management. These include:

- The Intellectual Capital movement with Leif Edvinsson and Tom Stewart and more recently Nick Bontis.
- A focus on collaboration including concepts of Community of practice and a range of collaborative technologies. Much of this work originates from research by Etienne Wenger and the Lotus Institute (now absorbed into IBM Research). Other prominent figures include Saint-Onge, McDermott and others.
- The use of social network analysis to understand interactions between people within organisations, both qualitatively and quantitatively, associated with Krebs, Stephen Borgatti, Cross and others.
- A body of work derivative of Information theory associated with Larry Prusak and Tom Davenport and linked to the conversion of internalized tacit knowledge into explicit codified knowledge (SECI) allowing successful knowledge sharing as highlighted by Ikujiro Nonaka and Hirotaka Takeuchi. This is probably the dominant school of thought, as represented by

publications and includes later developments by authors such as Probst, Von Krogh and Malhotra amongst many others.

- Management of tangibles and intangibles, living networks, co-creation and whole systems through value networks and value network analysis (Allee). This work also includes linkages and connections to theory associated with the Learning Organization.
- Complexity approaches associated with David Snowden (see Cynefin) Max Boisot, J C Spender and others. Variations of this include the use of narrative (Snowden, David M. Boje and others) as a form of fragmented knowledge

Key Concepts in Knowledge Management Dimensions Of Knowledge

A key distinction made by the majority of knowledge management practitioners is Nonaka's reformulation of Polanyi's distinction between tacit and explicit knowledge. The former is often subconscious, internalized, and the individual may or may not be aware of what he or she knows and how he or she accomplishes particular results. At the opposite end of the spectrum is conscious or explicit knowledge. Knowledge that the individual holds explicitly and consciously in mental focus, and may communicate to others. In the popular form of the distinction. Tacit knowledge is what is in our heads, and explicit knowledge is what we have codified.

Nonaka and Takeuchi (1995) ^[2] argued that a successful KM program needs, on the one hand, to convert internalized tacit knowledge into explicit codified knowledge in order to share it, but, on the other hand it also must permit individuals and groups to internalize and make personally meaningful codified knowledge they have retrieved from the KM system.

The focus upon codification and management of explicit knowledge has allowed knowledge management practitioners to appropriate prior work in information management, leading to the frequent accusation that knowledge management is simply a repackaged form of information management.^[3]

Critics have argued that Nonaka and Takeuchi's distinction between tacit and explicit knowledge is oversimplified and that the notion of explicit knowledge is self-contradictory. Specifically, for knowledge to be made explicit, it must be translated into information i.e., symbols outside of our heads.

Another common framework for categorizing the dimensions of knowledge include embedded knowledge (knowledge which has been incorporated into an artifact of some type, for example an information system may have knowledge embedded into its design) and embodied knowledge (representing knowledge as learned capability of the body's nervous, chemical, and sensory systems). These two dimensions while frequently used, are not universally accepted.

It is also common to distinguish between the creation of "new knowledge" (i.e. innovation) V/S. the transfer of "established knowledge" within a group, organization or community. Collaborative environments such as communities of practice or the use of social computing tools can be used for both creation and transfer.

Knowledge Access Stages

Knowledge may be accessed at three stages: before, during and after knowledge-related activities. Some people would argue that there is a life cycle to knowledge use. Starting with capture (although that word is itself contentious) or creation, moving on to use and reuse with the ultimate goal of enriching an organisation's capability. In counter to this many would state that such a life cycle view is too linear in nature and reflects an information centric view.

For example, individuals undertaking a new project for an organization might access information resources to identify lessons learned for similar projects, access relevant information again during the project implementation to seek advice on issues encountered and access relevant information afterwards for advice on after-project actions and review activities. Knowledge management practitioners offer systems, repositories and corporate processes to encourage and formalize these activities with varying degrees of success.

Similarly, knowledge may be accessed before the project implementation, for example as the project team learns lessons during the initial project analysis. Similarly, lessons learned during the project operation may be recorded, and after-action reviews may lead to further insights and lessons being recorded for future access. **Note:** in this context recording knowledge relates only to those aspects of knowledge which can be codified as text, or drawings.

Different organizations have tried various knowledge capture incentives, including making content submission mandatory and incorporating rewards into performance measurement plans. There is considerable controversy over whether incentives work or not in this field and no firm consensus has emerged.

Adhoc Knowledge Access

One alternative strategy to encoding knowledge into and retrieving knowledge from a knowledge repository such as a database is for individuals to make knowledge requests of subject matter experts on an ad hoc basis. A key benefit claimed for this strategy is that the response from the expert individual is rich in content and contextualized to the particular problem being addressed and personalized to the particular person or people addressing it. The downside of this strategy is that it is tied to the availability and memory recall skill of specific individuals in the organization. It does not capture their insights and experience for future use should they leave or become unavailable and also does not help in the case when particular technical issues or problems previously faced change with time to the point where a new synthesis is required, the experts memories being out of date. The emergence of narrative approaches to knowledge management attempts to provide a bridge between the formal and the adhoc, by allowing knowledge to be held in the form of stories.

Drivers of Knowledge Management

There are a number of claims as to 'drivers' or motivations, leading to organizations undertaking a knowledge management program.

Perhaps first among these is to gain the

competitive advantage (in industry) and/or increased effectiveness that comes with improved or faster learning and new knowledge creation. Knowledge management programs may lead to greater innovation, better customer experiences, consistency in good practices and knowledge access across a global organization as well as many other benefits, and knowledge management programs may be driven with these goals in mind. Government represents a highly active area, for example DiploFoundation Conference on Knowledge and Diplomacy (1999) outlines the range of specific KM tools and techniques applied in diplomacy.

Considerations driving a Knowledge Management program might include:

- Making available increased knowledge content in the development and provision of products and services.
- Achieving shorter new product development cycles.
- Facilitating and managing organizational innovation and learning.
- Leverage the expertise of people across the organization.
- Benefiting from 'network effects' as the number of productive connections between employees in the organization increases and the quality of information shared increases, leading to greater employee and team satisfaction.
- Managing the proliferation of data and information in complex business environments and allowing employees rapidly to access useful and relevant knowledge resources and best practice guidelines.
- Managing intellectual capital and intellectual assets in the workforce (such as the expertise and know-how possessed by key individuals) as individuals retire and new workers are hired.

Knowledge Management Technologies

The early Knowledge Management technologies were online corporate yellow pages (expertise locators) and document management systems. Combined with the early development of collaborative technologies (in particular Lotus

Notes), KM technologies expanded in the mid 1990s. Subsequently it followed developments in technology in use in Information Management. In particular the use of semantic technologies for search and retrieval and the development of knowledge management specific tools such as those for communities of practice.

More recently social computing tools (such as blogs and wikis) have developed to provide a more unstructured approach to knowledge transfer and knowledge creation through the development of new forms of community. However, such tools for the most part are still based on text and thus represent explicit knowledge transfer. These tools face challenges distilling meaningful re-usable knowledge from their content.

Knowledge mapping is commonly used to cover functions such as a knowledge audit (discovering what knowledge exists at the start of a knowledge management project), a network survey (Mapping the relationships between communities involved in knowledge creation and sharing) and creating a map of the relationship of knowledge assets to core business process. Although frequently carried out at the start of a Knowledge Management programme, it is not a necessary pre-condition or confined to start up.

Knowledge Management Enablers

Historically, there have been a number of technologies 'enabling' or facilitating knowledge management practices in the organization, including expert systems, knowledge bases, various types of Information Management, software help desk tools, document management systems and other IT systems supporting organizational knowledge flows.

The advent of the Internet brought with it further enabling technologies, including e-learning, web conferencing, collaborative software, content management systems, corporate 'Yellow pages' directories, email lists, wikis, blogs, and other technologies. Each enabling technology can expand the level of inquiry available to an employee while providing a platform to achieve specific goals or actions. The practice of KM will continue to

evolve with the growth of collaboration applications, visual tools and other technologies. Since its adoption by the mainstream population and business community. The Internet has led to an increase in creative collaboration, learning and research, e-commerce and instant information.

There are also a variety of organisational enablers for knowledge management programs, including Communities of Practice, Networks of Practice, before, after and during action reviews (see After Action Review), peer assists, information taxonomies, coaching and mentoring and so on.

Knowledge Management Roles and Organizational Structure

Knowledge management activities may be centralized in a Knowledge Management Office, or responsibility for knowledge management may be located in existing departmental functions, such as the Human Resource (to manage intellectual capital) or IT departments (for content management, social computing etc.). Different departments and functions may have a knowledge management function and those functions may not be connected other than informally.

Knowledge Management Reasons of Failure or Success

There is no established evidence as to the reasons behind failure and success of Knowledge Management initiatives in organizations. Some argue that a failure to sustain investment is one factor, but it can equally be argued that if knowledge management delivered on its promises investment would continue. As with many management initiatives, particularly those with a heavy IT basis (as is the case in Knowledge Management), frequent questions are raised about the level of consultation necessary before a program is started; these questions are linked to issues of cultural change and a willingness to share and collaborate with colleagues. There is no evidence that Knowledge Management, in all these respects is any different from other management initiatives.

<http://www.media-access.com/whatis.html>, http://en.wikipedia.org/wiki/Knowledge_management.