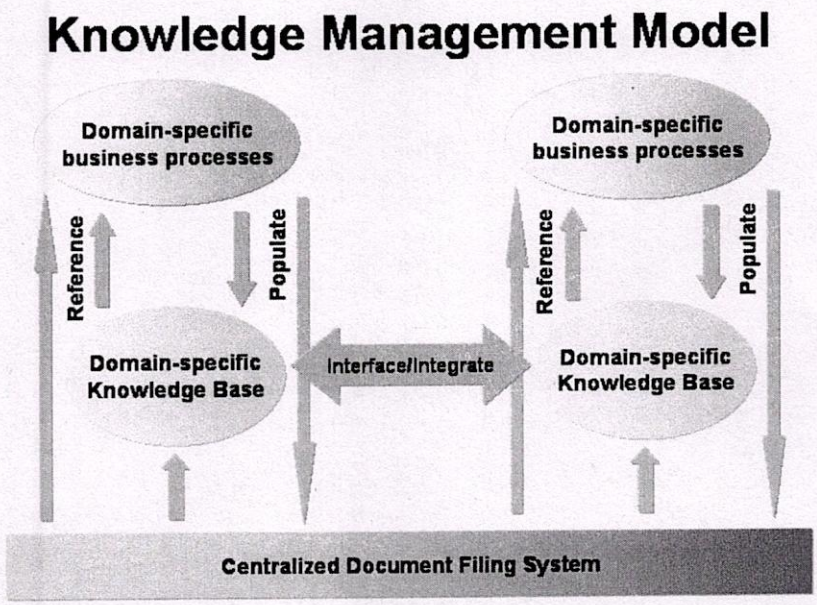
Knowledge Management for Performance
By KK Aw

1. Introduction

Various reasons have been mooted for the slow adoption and implementation of Knowledge Management (KM) systems in various enterprises. Knowledge management is a very broad subject. A wide range of software applications and activities such as document management, collaboration, knowledge sharing, library systems, workflow, content management applications, balance score card, SWOT analysis, business intelligence, business contingency planning, risk management and e-learning are components of a KM solution but by themselves they do not form a KM system. Unfortunately, the vendors, the consultants and the academics, in their over-zealous marketing efforts, are branding these applications as KM solutions. This makes the KM market place very confusing and businesses are not sure what to make of it. Until businesses see real value in implementing a KM solution they may not be willing to invest in it. This article hopes to dispel some of these myths and present a practical Knowledge Management Model.

2. Knowledge Management Model

The following KM model was proposed in my joint paper entitled "Complexity and Knowledge Management: Learning from the Industrial Revolution," presented at ICKM 2005 (Kuala Lumpur).



In this model, the KM system is intended to provide infrastructure support for knowledge intensive processes of the organization. The emphasis here is on knowledge performance and getting results rather than the more traditional emphasis on contents management, knowledge sharing or information access.

Business processes are the life blood of organizations and making these processes more effective would be very attractive to businesses. It is also necessary to distinguish knowledge intensive processes from production and transactional processes. Knowledge intensive processes are likely to be strategic in nature. The infrastructure support provided by the KM system must enhance the effectiveness of these knowledge intensive business processes and may in fact be required for these processes to be viable. Business process improvement per se is not knowledge management.

Since a KM system will be expensive to implement, populate and maintain, it is important that it should provide support for multiple current and future business processes for the investment to realize a reasonable return.

3. Document filing system

At the foundation of the proposed KM model is a document filing system (DFS). This provides for the filing of the documents and records generated or acquired by the organizations. The maintenance of these records may be also required by statutory requirements. The emphasis here is on the integrity of the records and the ease of finding, retrieving the documents and the ability to handle a large number of documents irrespective of their size and type. It is advantageous for some metadata to be added to these documents such as the summary information provided in the Microsoft NTFS system so that computers can process these documents effectively. Unfortunately, NTFS does not allow metadata to be added to folders and this has to be handled by the DFS.

Since most documents, however trivial, must be filed, it is likely that the noise to signal ratio is too high for users to use the DFS as a KM solution. The DFS also does not address the problem of information overload and information glut. However, summaries from the DFS may be exported for inclusion in the knowledge bases. The DFS as described is not necessarily a document management system (DMS) as the DMS may include more sophisticated facilities like workflow support and other capabilities.

4. Domain specific knowledge bases

The key to this KM Model is the domain specific knowledge bases. The knowledge bases should contain concise and yet comprehensive information about the domain. "Knowledge bases" is a phrase that is used and abused extensively recently. What constitute a knowledge base? What should be the content of the knowledge bases? How should the information be organized to improve performance? What facilities should be provided for the users? Are knowledge bases some thing new?

In my previous career as a mechanical engineer, I always have the following handbooks readily available:

- Marks' Standard Handbook for Mechanical Engineers (2,080 pages)
- Machinery's Handbook (2690 pages)
- Standard Handbook of Engineering Calculations (Hicks, 1200 pages)

Marks' Standard Handbook is described in Amazon.com as "2,080 pages of mechanical engineering facts, figures, standards and practices; 3,000 illustrations and 900 tables clarify every important mathematical and engineering principle; collective knowledge of *168* experts helps you answer any analytical, design and application question you'll ever have; Most up-to-date engineering data available in a single source on networks, software, bar coding, electronic distance measurement, LSI and FLSI chips, optical design and more!"

The Machinery's Handbook is described as "Celebrating its 90th year, the newest edition of 'The Bible' in its field brings together volumes of knowledge, information and data gathered, revised and improved upon from experts throughout the mechanical industries. Extraordinarily comprehensive yet easy to use since it premiered, *Machinery's Handbook* provides mechanical and manufacturing engineers, designers, draftsmen, toolmakers, and machinists with a broad range of material, from the very basic to the more advanced."

Sci-Tech Book Review, Dec. 2004 for the Standard Handbook of Engineering Calculations: "more than 5000 calculation procedures for solving common engineering problems...divided into sections corresponding to seven engineering disciplines... "cookbook" format."

In the writer's opinion, this is an excellent example of a knowledge base, with contributions from hundreds of experts. This is the first resource a practicing mechanical engineer will refer to when faced with a new problem. If necessary, the references provided in the handbooks will help the engineer find the additional resources required for solving the more complex engineering problems. Other professional disciplines may have similar "handbooks" developed over the years for the use of their members. This is a rich and important resource for KM professionals to learn from the structure and contents of these handbooks in designing knowledge bases. Unfortunately, these handbooks maybe quite incomprehensible to the uninitiated and no apologies should be offered.

With the advances in ICT and computing powers in recent years, the challenge would be to build an electronic knowledge base that will increase knowledge performance significantly and at the same time facilitate updating with new knowledge and lessons learned. Rules must be established for the inclusion, editing, superceding and removal of information from the knowledge base and this must be strictly enforced. The knowledge base must be capable of supporting the business processes of the organization with or without further customization. It must be sufficiently granular to support information reuse but at the same time provides structure for easy navigation and exploration. Suffice to say that full-text search alone is simply not sufficient.

5. Domain specific business processes

The business processes employed by any business, be it engineering, production, marketing, management, HR, consulting, law, medicine, public administration, etc., are all different. Identifying the business processes that are knowledge intensive and that will benefit from a knowledge base would be the first step in implementing a KM

solution. Understanding how these processes use knowledge would be a prerequisite in designing the domain specific knowledge bases.

About the Author:

KK Aw is a mechanical engineer by training. He has been involved in KM since 1995 and is the developer of the Multicentric Information Framework. He is a director of Multicentric Technology Sdn Bhd (http://www.multicentric.com), a company that specializes in developing KM tools.