

## The Business of Knowledge Management

### Introduction

With company downsizing and high turnover rates a reality in the post 9/11 business arena, the potential for a loss of critical information to organizations is high. Business knowledge leaves the company unless there is a way to capture, store, and retrieve it. In addition, geographic barriers can reduce the flow of knowledge throughout an organization. These factors and more have created the need for knowledge management (KM) (also referred to as enterprise knowledge management, knowledge management systems, knowledge assets management, executive information systems, information support systems, and business intelligence systems). The need for knowledge management was evident as early as 1996, as Daniel E. O'Leary of the University of Southern California observed, "Over 40 percent of the Fortune top 100 companies have a chief knowledge officer (CKO), a senior-level executive responsible for creating an infrastructure and cultural environment for knowledge sharing."

Knowledge management has been defined as, "the art or science of collecting organizational data and, by recognizing and understanding relationships and patterns, turning it into usable, accessible information and valuable knowledge" (Loshin, 2001). Alavi and Leidner describe it as, "identifying and leveraging the collective knowledge in an organization to help the organization compete" (2001). This process in many cases involves the use of knowledge management systems; the objective of knowledge management systems is to support creation, transfer, and application of knowledge in organizations.

While these definitions help clarify the role of knowledge management, O'Leary defines knowledge management more specifically to the enterprise, "Knowledge management entails formally managing knowledge resources in order to facilitate access and reuse of knowledge, typically by using advanced information technology...the overriding purpose of knowledge management is to make knowledge accessible and reusable to the enterprise" (1998).

The knowledge that concerns knowledge management is organizational knowledge: the sum of all knowledge within an organization (Loshin, 2001). This knowledge is considered an intangible asset and is stored in the minds of the workforce as well as in information systems. This knowledge can be measured by assessments, audits, benchmarks, and surveys. Perhaps less measurable, organizational

beliefs and value systems are of no less of importance to knowledge management. In many ways, they can be traced to organizational memory, "stored information from an organizational history that can be brought to bear on present decisions to which they refer, by individual recollections, and through shared interpretations" (Walsh and Ungson, 1991).

This paper will explore key issues and critical success factors for doing knowledge management, as well as addressing such issues as what enterprise architecture and wisdom have to do with KM, the workforce and KM, legal and ethical considerations of KM, and metrics for KM.

### **Key Issues**

#### **People**

Workforce management, training, mentoring, succession planning, training of contributing content editors, and specifying of roles for knowledge management personnel.

#### **Culture**

Transformation of organizational culture toward sharing of knowledge for competitive advantage, and creation of an environment where the internal sharing of knowledge is encouraged and rewarded.

#### **Content**

Manuals, letters, summaries, news, consumer information, competitor intelligence, work processes, user profiles, user histories, and access logs.

#### **Technologies**

E-mail, databases and data warehouses, group support systems, browsers and search engines, intranets and internets, expert and knowledge-based systems, and intelligent agents.

#### **Security**

Encryption technologies, authentication procedures, access privileges, and network audit & intrusion-detection.

#### **Measures**

Evaluative metrics to quantitatively and qualitatively measure the success of knowledge management objectives include return-on-investment (ROI), adoption-rates, user-awareness, and time-to-live of system.

## Knowledge Management

### Knowledge Management & Enterprise Architecture

Knowledge Management implies Enterprise Architecture. The architectural components that make up a knowledge management system include data models, systems design, and technology, network, and securities architectures. In addition, the enterprise architecture functions as a map of the enterprise, thus facilitating the alignment of the knowledge management system with the business. In particular, the Zachman Framework (see figure 1) provides a precision instrument for designing a knowledge management system and in general for doing architecture at the enterprise level.

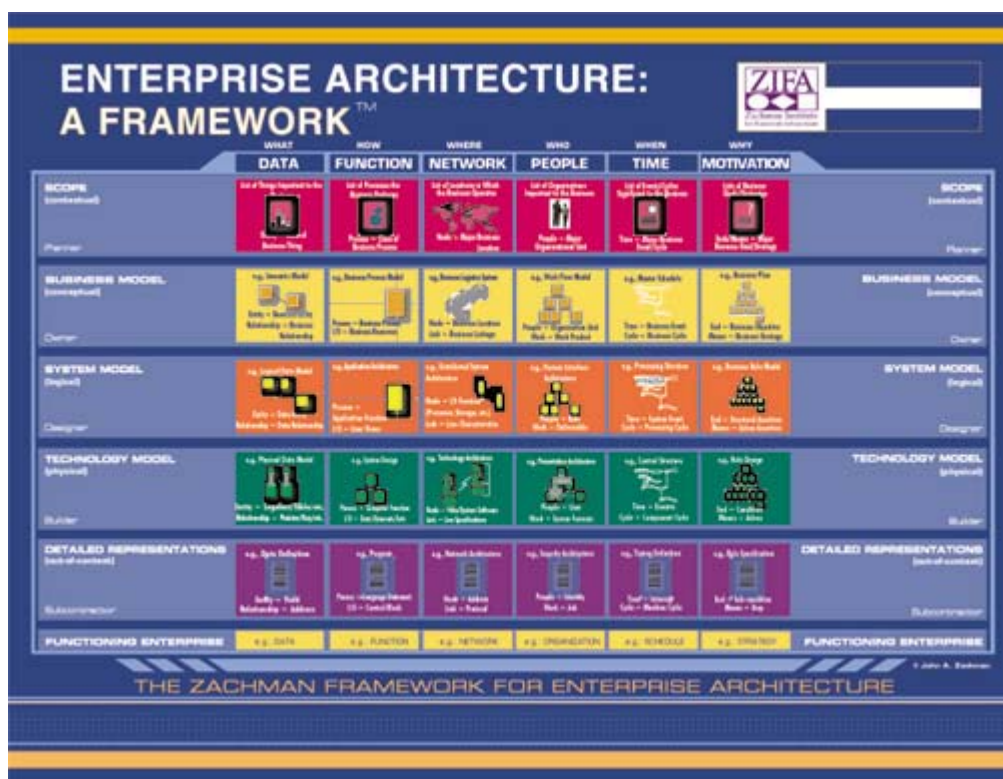


Figure 1. Zachman Framework. (Zachman, 2002).

The Zachman Framework is a logical structure for classifying and organizing objects that collectively define an Enterprise Architecture (EA). It consists of various cells assigned to data (what is done), function (how things are done), network (where things are done), people (who gets things done), time (when things are done), and motivation (why things are done) from the highest levels of abstraction (scope) to the most concrete (the functioning enterprise).

This framework is important for knowledge management as a tool for designing data and systems architectures, for aligning knowledge management goals and objectives with the business plan, and in general by providing a map of the architecture of the enterprise.

### Knowledge Management & Wisdom

While the definition of knowledge is a problem for epistemologists, in the context of business, knowledge generally refers to any information that can further an organizations goals (Loshin, 2001). It is the objective of knowledge management to collect, index, store, and analyze knowledge in order to have an advantage over competitors. At best, knowledge management may lead to the Holy Grail, wisdom. What is wisdom and what does it have to do with knowledge management? To answer that question will require a clarification of terms.

A hierarchy of data, information, knowledge, and wisdom (see figure 2) may help to clarify the relationship between these terms (Bellinger, 2002). According to the hierarchy, knowledge starts with data; data are raw facts. What distinguishes data is a lack of relations. Information is relational data, thus information introduces the *understanding of relations* between data in context. Knowledge is the *understanding of patterns* of context dependant data and information. Finally, wisdom is the *understanding of fundamental principles* that arise from knowledge patterns. Thus, wisdom represents both the highest levels of understanding and context independence.

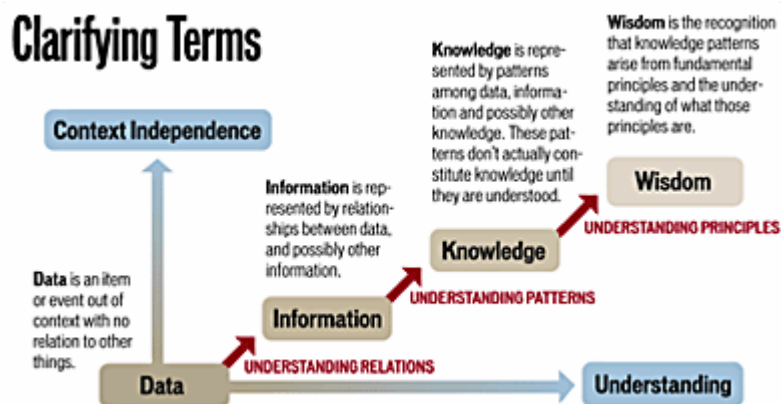


Figure 2. Clarifying Terms. (Loshin, 2001).

It is with the use of knowledge management systems that organizational wisdom may emerge. Collecting, indexing, storing, and analyzing organizational knowledge facilitates the recognition of fundamental principles that may eventually constitute organizational wisdom.

### **Knowledge Management & the Workforce**

Knowledge management can facilitate workforce management, training, mentoring, and succession planning. The knowledge management system provides information such as user histories to monitor and assess employee activities. In addition, repositories within the knowledge management system facilitate management decision-making. It also provides a training platform based on knowledge from the history of the organization; even if senior knowledge workers are not available to train the workforce, the knowledge is accessible. This goes for mentoring programs as well. Moreover, long-term successful succession planning is enabled with the help of an accumulated history of information on employees. Knowledge management systems foster a “learning organization,” in which employees and executives at all levels are engaged in a state of perpetual learning. Knowledge is thus distributed throughout the organization as opposed to being isolated to a select few.

### **Knowledge Management & Legal/Ethical Considerations**

Perhaps the most visible legal and ethical consideration surrounding knowledge management is privacy. While user profiles and access logs may contain much personal information, they can also be used to monitor and spy on employee activity. This may be considered an invasion of privacy and at the least arouse worker resentment. Binding legislation concerning employee privacy is lacking and thus privacy policies vary widely from organization to organization.

Intellectual property rights are also a consideration. It may prove to be quite difficult to determine legal rights for knowledge stored within an knowledge management system. Is knowledge the property of the organization, or the individuals that make up the organization? If an individual contributes intellectual property to a knowledge management system and then leaves the company, perhaps to work for a competitor, does the individual have rights to his intellectual property? On the other hand, can the organization in effect “muzzle” the one-time employee from sharing his intellectual property with competitors? Issues such as these raise complex and ambiguous questions that are still being sorted out in judicial systems across the country.

Litigation involving electronic documents presents a great challenge to business organizations as well (Bennett, 2002). Use of business e-mail for one has caused the revamping of document retention policies. Electronic documents are “discoverable” in litigation, and the judicial system expects such data to be preserved, at a substantial cost to businesses. And sanctions such as penalties for contempt or obstruction of justice are the price of non-compliance. The integration of electronic devices such as cell phones, personal digital assistants, and various web and e-mail devices is furthering the incentives to create, distribute, and retain electronic documents. With the development of effective archiving technology, the need for vast databases to preserve data is a reality. Thus, the use of technologies involving electronic documents such as with a knowledge management system should be weighed with the disadvantages of potential legal obligations.

### **Knowledge Management & Metrics**

The measurement of the success and performance of a knowledge management system requires that a system of evaluation metrics be developed (Johnson, 2002). A common means of demonstrating the value of an enterprise management system is by return-on-investment (ROI). Such a measurement might include adoption-rates of the knowledge management system, the success/failure of knowledge management objectives, user-awareness of knowledge management systems applications, and the time-to-live of the system.

### **Critical Success Factors**

Organizations invest in knowledge management to collect, index, store, and analyze knowledge. Thus, the critical role of knowledge in organizations is apparent. Transferring the knowledge stored in the minds of enterprise executives and personnel to an knowledge management system facilitates the dissemination of knowledge throughout the organization, enhances organizational learning, and facilitates organizational wisdom. Critical success factors for doing knowledge management are as follows:

- A.** Facilitate workforce management, training, mentoring, succession planning, training of contributing content editors, and specifying of roles for knowledge management personnel.

- B.** Develop an organizational culture that facilitates sharing of knowledge for competitive advantage, and creation of an environment where the internal sharing of knowledge is encouraged and rewarded.
- C.** Capture, store, and retrieve knowledge management system content such as manuals, letters, summaries, news, consumer information, competitor intelligence, work processes, user profiles, user histories, and access logs.
- D.** Deploy and maintain knowledge management technologies such as e-mail, databases and data warehouses, group support systems, browsers and search engines, intranets and internets, expert and knowledge-based systems, and intelligent agents.
- E.** Provide security for knowledge management systems with encryption technologies, authentication procedures, access privileges, and network audit & intrusion-detection.
- F.** Measure the success of knowledge management initiatives with return-on-investment, adoption-rates, user-awareness, and time-to-live.

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