Chapter VI

The KM Technological Infrastructure

Introduction

To compete in the current dynamic business environment, organizations have to develop an ability to strategically use the knowledge assets already inherent within them as well as the new intellectual capital they create daily. As mentioned previously, knowledge management is an area that is not always easily defined, since it is broad and spans various disciplines. The field encompasses the use of management levers, techniques, methods, collaborative concepts, as well as the use of various information computer and communications technologies (IC²T). However, it is difficult to imagine robust and effective KM initiatives taking place in the Information Age without a solid technology infrastructure supporting them. The development of such a robust infrastructure requires special attention to be paid to critical aspects, including the architecture from which the infrastructure is developed, as well as the interconnecting of the various possible IC²T and their support of specific KM steps.
Architecture, specifically the information technology architecture, is an integrated set of technical choices used to guide an organization in satisfying its business needs (Weill & Broadbent, 1998). Typical information technology architectures contain policies and guidelines covering hardware and software considerations, communications and network issues, guidelines pertaining to data usage and storage, as well as applications and their functions (Wickramasinghe & Davison, 2004). Similarly, the knowledge architecture outlines key aspects of knowledge including its form, how it is captured, and transferred throughout the organization (Wickramasinghe, 2003; Wickramasinghe & Davison, 2004). Underlying the knowledge architecture (refer to Figure 1) is the recognition of the binary nature of knowledge; namely its objective and subjective components (Wickramasinghe, 2003). The knowledge architecture is designed to enable all the multiple facets of the knowledge construct to be represented within its overarching structure.

The knowledge architecture recognizes the different yet key aspects of knowledge; such as knowledge as an object and a subject, and thus provides the blue prints for the design of an all encompassing knowledge management system (KMS), in the same way the IT architecture defines the design for any IT system (Weill & Broadbent, 1998; Wickramasinghe, 2003). Clearly then, the knowledge architecture is defining a KMS that supports both objective and subjective attributes of knowledge and requires a solid KM infrastructure to be developed in order to actualize such a KMS.

The pivotal function underlined by the knowledge architecture is the flow of knowledge. The flow of knowledge is fundamentally enabled (or not) by the knowledge management system. Given the importance of knowledge, systems are being developed and implemented in organizations that aim to facilitate the sharing and integration of knowledge (i.e., support and facilitate the flow of knowledge). Such systems are called knowledge management systems (KMSs) as distinct from transaction processing systems (TPSs), management information systems (MISs), decision support systems (DSSs) (Alavi & Leidner, 1999; Lee & Yang, 2000; Persaud, 2001), and executive information systems (EISs) (Alavi, 1999). For example, companies of note that have specifically implemented KMS include Cap Gemini Ernst & Young, KPMG, and Accenture (Davenport & Hansen, 1999; Wickramasinghe, 2003). In fact, the large consulting companies were some of the first organizations to realize the benefits of knowledge management and plunge into the knowledge management abyss (Davenport & Prusak, 1998). These companies treat knowledge management with the same high priority as they do strategy formulation, an illustration of how important knowledge management is viewed in practice (Wickramasinghe, 2003). Essentially, these knowledge management systems use combinations of the following technologies: the Internet, intranets, extranets, browsers, data warehouses, data filters, data mining, client server, multimedia, groupware, and software agents.
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