The Role for Knowledge Management in Modern Healthcare Delivery

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ABSTRACT

As medical science advances and the applications of information and communications technologies (ICTs) to healthcare operations diffuse more data, information begins to permeate healthcare databases and repositories. However, given the voluminous nature of these disparate data assets, it is no longer possible for healthcare providers to process these data without the aid of sophisticated tools and technologies. The goal of knowledge management is to provide the decision maker with appropriate tools, technologies, strategies and processes to turn data and information into valuable knowledge assets. This paper discusses the benefits of incorporating these tools and techniques to the healthcare arena in order to make healthcare delivery more effective and efficient. To ensure a successful knowledge management initiative in a healthcare setting, the paper proffers the knowledge management infrastructure (KMI) framework and intelligence continuum (IC) model. The benefits of these techniques lie not only in the ability of making explicit the elements of these knowledge assets, and in so doing enable their full potential to be realized, but also to provide a systematic and robust approach to structuring the conceptualization of knowledge assets.

Keywords: Business Intelligence, Data Mining, Healthcare, Healthcare Delivery, Intelligence Continuum, Knowledge Assets, Knowledge Management Infrastructure

INTRODUCTION

Knowledge management is an emerging management technique that is aimed at solving the current business challenges to increase efficiency and efficacy of core business processes while simultaneously incorporating continuous innovation. The premise for the need for knowledge management is based on a paradigm shift in the business environment where knowledge is central to organizational performance (Drucker, 1993, 1999).

Knowledge management offers organizations many tools, techniques and strategies to apply to their existing business processes. Healthcare is an information rich industry that offers a unique opportunity to analyze extremely large and complex data sets. The collection of data permeates all areas of the healthcare industry and when coupled with the new trends in evidence-based medicine and electronic medical record systems, it is imperative that the healthcare industry embraces the tools, technologies, strategies and processes of
knowledge management if it is to fully realize the benefits from all these data assets.

The successful application of knowledge management hinges on the development of a sound knowledge management infrastructure and the systematic and continuous application of specific steps supported by various technologies. This serves to underscore the dynamic nature of knowledge management where the existing extant knowledge base is always being updated. The knowledge management infrastructure (KMI) framework not only helps organizations to structure their knowledge assets but also make explicit the numerous implicit knowledge assets currently evident in healthcare (Wickramasinghe & Davidson, 2004), while the intelligence continuum (IC) provides the key tools and technologies to facilitate superior healthcare delivery (Wickramasinghe & Schaffer, 2006). Taken together, the KMI and IC can enable healthcare to realize its value proposition of delivering effective and efficient value added healthcare services.

2. KNOWLEDGE MANAGEMENT

“Land, labor, and capital now pale in comparison to knowledge as the critical asset to be managed in today’s knowledge economy.” Peter F. Drucker (1999, p. 47)

The nations that lead the world into the next century will be those who can shift from being industrial economies, based upon the production of manufactured goods, to those that possess the capacity to produce and utilize knowledge successfully. The focus of the many nations’ economy has shifted first to information-intensive industries such as financial services and logistics, and now toward innovation-driven industries, such as computer software and biotechnology, where competitive advantage lies mostly in the innovative use of human resources. This represents a move from an era of standardization to an era of innovation where knowledge, its creation and management hold the key to success (Bukowitz & Williams, 1997; Drucker, 1993, 1999).

Knowledge management is a key approach to help solve current business problems such as competitiveness and the need to innovate that are faced by organizations today. The premise for knowledge management is based on a paradigm shift in the business environment where knowledge is central to organizational performance (Swan et al., 1999; Newell et al., 2002). In essence, knowledge management not only involves the production of information but also the capture of data at the source, the transmission and analysis of this data as well as the communication of information based on or derived from the data to those who can act on it (Davenport & Prusak, 1998). Thus, data and information represent critical raw assets in the generation of knowledge while successful knowledge management initiatives require a tripartite view; namely the incorporation of people, processes and technologies (Wickramasinghe, 2003).

Broadly speaking, knowledge management involves four key steps of creating/generating knowledge, representing/storing knowledge, accessing/using/re-using knowledge, and disseminating/transferring knowledge (Davenport & Prusak, 1998; Markus, 2001; Alavi & Leidner, 2001; Wickramasinghe, 2006). Knowledge creation, generally accepted as the first step for any knowledge management endeavor, requires an understanding of the knowledge construct as well as its people and technology dimensions. Given that knowledge creation is the first step in any knowledge management initiative, it naturally has a significant impact on the other consequent KM steps, thus making the identification of and facilitating of knowledge creation a key focal point for any organization wanting to fully leverage its knowledge potential.

Knowledge, however, is not a simple construct. Specifically, knowledge can exist as an object, in essentially two forms; explicit or factual knowledge and tacit or “know how” (Polanyi, 1958, 1966). It is well established that while both types of knowledge are important, tacit knowledge is more difficult to identify and thus manage (Nonaka, 1994; Nonaka & Nishiguchi, 2001). Of equal importance, though perhaps less well defined, knowledge also has a
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