



Knowledge Management and New Organization Forms: A Framework for Business Model Innovation

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The concept of knowledge management is not new in information systems practice and research. However, radical changes in the business environment have suggested limitations of the traditional information-processing view of knowledge management. Specifically, it is being realized that the programmed nature of heuristics underlying such systems may be inadequate for coping with the demands imposed by the new business environments. New business environments are characterized not only by rapid pace of change but also discontinuous nature of such change. The new business environment, characterized by dynamically discontinuous change, requires a re-conceptualization of knowledge management as it has been understood in information systems practice and research. One such conceptualization is proposed in the form of a sense-making model of knowledge management for new business environments. Application of this framework will facilitate business model innovation necessary for sustainable competitive advantage in the new business environment characterized by dynamic, discontinuous and radical pace of change.

"People bring imagination and life to a transforming technology." — *Business Week*, The Internet Age (Special Report), October 4, 1999, p. 108

The traditional organizational business model, driven by pre-specified plans and goals, aimed to ensure optimization and efficiencies based primarily on building consensus, convergence and compliance. Organizational information systems—as well as related performance and control systems—were modeled on the same paradigm to enable convergence by ensuring adherence to organizational routines built into formal and informal information systems. Such routinization of organizational goals for realizing increased efficiencies was suitable for the era marked by a relatively stable and predictable business environment. However, this model is increasingly inadequate in the e-business era which is often characterized by an increasing pace of radical and unforeseen change in the business environment (Arthur 1996, Barabba, 1998; Malhotra, 1998b; Kalakota and Robinson, 1999; Nadler *et al.*, 1995).

The new era of dynamic and discontinuous change requires continual reassessment of organizational routines to ensure that organizational decision-making processes, as well as underlying assumptions, keep pace with the dynamically changing business environment. This issue poses increasing challenge as 'best services' of yesterday—turn into 'worst practices' and core competencies turn into core rigidities. The changing business environment, characterized by dynamically discontinuous change, requires a re-conceptualization of knowledge management systems as they have been understood in information systems practice and research. One such conceptualization is proposed in this article in the form of a framework for developing organizational knowledge management systems for business model innovation. It is anticipated that application of this framework will facilitate development of new business models that are better suited to the new business environment characterized by dynamic, discontinuous and radical pace of change.

The popular technology-centric interpretations of knowledge management that have been prevalent in most of

the information technology research and trade press are reviewed in the next section. The problems and caveats inherent in such interpretations are then discussed. The subsequent section discusses the demands imposed by the new business environments that require rethinking such conceptualizations of knowledge management and related information technology based systems. One conceptualization for overcoming the problems of prevalent interpretations and related assumptions is then discussed along with a framework for developing new organization forms and innovative business models. Subsequent discussion explains how the application of this framework can facilitate development of new business models that are better suited to the dynamic, discontinuous and radical pace of change characterizing the new business environment.

Knowledge Management: The Information Processing Paradigm

The information-processing view of knowledge management has been prevalent in information systems practice and research over the last few decades. This perspective originated in the era when business environment was less vacillating, the products and services and the corresponding core competencies had a long multi-year shelf life, and the organizational and industry boundaries were clearly demarcated over the foreseeable future. The relatively structured and predictable business and competitive environment rewarded firms' focus on economies of scale. Such economies of scale were often based on high level of efficiencies of scale in absence of impending threat of rapid obsolescence of product and service definitions as well as demarcations of existing organizational and industry boundaries.

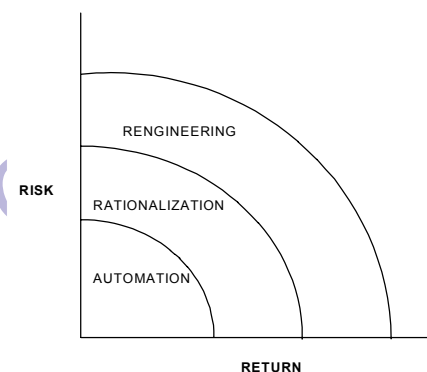
The evolution of the information-processing paradigm over the last four decades to build intelligence and manage change in business functions and processes has generally progressed over three phases:

1. *Automation*: increased efficiency of operations;
2. *Rationalization of procedures*: streamlining of procedures and eliminating obvious bottlenecks that are revealed by automation for enhanced efficiency of operations; and,
3. *Re-engineering*: radical redesign of business processes that depends upon information technology intensive radical redesign of workflows and work processes.

The information-processing paradigm has been prevalent over all the three phases, which have been characterized by technology intensive, optimization-driven, efficiency-seeking organizational change (Malhotra, 1999c, 1999d, in press). The deployment of information technologies in all the three phases was based on a relatively predictable view of products and services as well as contributory organizational and industrial structures.

Despite increase in risks and corresponding returns relevant to the three kinds of information technology enabled organizational change, there was little, if any, emphasis on

Figure 1: Information Processing Paradigm: Old World of Business



business model innovation —rethinking the business’ — as illustrated in Figure 1. Based on the consensus and convergence-oriented view of information systems, the information processing view of knowledge management is often characterized by benchmarking and transfer of best practices (Allee, 1997; O'Dell and Grayson, 1998). The key assumptions of the information-processing view are often based on the premise of the generalizability of issues across temporal and contextual frames of diverse organizations.

Such interpretations have often assumed that adaptive functioning of the organization can be based on explicit knowledge of individuals archived in corporate databases and technology-based knowledge repositories (Applegate, et al., 1988, p. 44; italics added for emphasis):

“Information systems will maintain the corporate history, experience and expertise that long-term employees now hold. The information systems themselves — *not the people* — can become the stable structure of the organization. *People will be free to come and go, but the value of their experience will be incorporated in the systems that help them and their successors run the business.*”

The information processing view, evident in scores of definitions of knowledge management in the trade press, has considered organizational memory of the past as a reliable predictor of the dynamically and discontinuously changing business environment. Most such interpretations have also made simplistic assumptions about storing *past* knowledge of individuals in the form of routinized rules-of-thumb and best practices for guiding *future* action. A representative compilation of such interpretations of knowledge management is listed in Table 1.

Based primarily upon a static and ‘syntactic’ notion of knowledge, such representations have often specified the *minutiae of machinery* while disregarding how people in organizations actually go about acquiring, sharing and creating new knowledge (Davenport, 1994). By considering the meaning of knowledge as “unproblematic, predefined, and prepackaged” (Boland 1987), such interpretations of knowl-

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