Knowledge management (KM) has been a topic of considerable researcher and practitioner interest the past several years. Although a well-established tradition of organizational learning research could be considered an adumbration if not a forerunner of organizational KM, KM as a research discipline has drawn less from organizational learning than from strategy research, namely the resource-based view of the firm. Building on the resource-based theory which argues that it is the services rendered by a firm’s tangible resources, rather than the resources in and of themselves, that create a firm’s competitive advantage (Barney, 1991; Conner, 1991; Wernerfelt, 1984), the knowledge-based perspective of the firm posits that the services rendered by tangible resources depend upon how the resources are combined and applied — a function of the firm’s know-how or knowledge, an intangible resource. Because knowledge-based resources are difficult to imitate and are socially complex, the knowledge-based view of the firm suggests that knowledge assets may produce sustainable competitive advantage. Given the perceived centrality of knowledge assets to organizational competitiveness, the management of an organization’s knowledge has assumed a role of critical importance. Already by 1998, one survey revealed that one in ten firms claimed that KM was transforming the way their organization did business and 43% claimed to be undertaking a KM initiative (KPMG, 1998).

In practice, KM initiatives have been prompted by several factors, among them employee turnover, rapid firm growth, and pressures to reduce cycle times. The loss of key personnel results in a concomitant loss of that individual’s knowledge. One survey of European firms found that half of those surveyed reported to have suffered significant damage from losing key employees with impaired client or supplier relations and loss of income being the most widely cited damages (Nolan Norton, 1998). While larger organizations face a problem of employee mobility, smaller firms, particularly startups in the fast-paced ecommerce sector, face the problem of such rapid organizational growth that the assimilation of new employees is difficult. This has prompted interest in knowledge repositories to help bring new employees quickly to a productive capacity. Finally, pressures to respond quickly to bid proposals, or to bring products to market faster, necessitates intense coordination of a firm’s knowledge resources. Too many firms face problems maintaining, locating, and applying their own knowledge (Cranfield, 1998), which, if readily assessible, would enable them to reduce cycle times. For example, Ford found that by sharing knowledge internally, the development time for cars was
reduced from 36 to 24 months, and through knowledge sharing with dealers, the delivery delay reduced from 50 to 15 days (Gazeau, 1998).

While KM is not a technology-centered issue, many KM initiatives involve some application of IS to help organize, codify, distribute and maintain the organization’s knowledge resources. IT can support KM in sundry ways. Examples include finding an expert or a recorded source of knowledge using online directories and searching databases; sharing knowledge and working together in virtual teams; access to information on past projects; and learning about customer needs and behavior by analyzing transaction data (KPMG, 1998), among others. Indeed, there is no single role of IT in KM just as there is no single technology comprising KMS.

In this special issue, Alan Fowler examines the application of artificial intelligence to KM and, using data from a case study, suggests areas where AI can support the KM process. Entitled “The role of AI based technology in support of the knowledge management value activity cycle,” Fowler’s article uses data from a case study of Baypoint’s Technical Centre to develop a knowledge activity cycle and to demonstrate where knowledge-based systems, case-based reasoning, and neural networks can be deployed throughout the cycle. While many assume that intranets and groupware are the primary IT behind KMS, Fowler helps us consider a broader spectrum of potential IT applications to KM.

From an IS perspective, KM initiatives represent a first major attempt to provide unstructured information (tacit knowledge) throughout the organization. Knowledge management systems (KMS) have enabled an anyone, anytime, anywhere information strategy where users become active as content providers (Leidner, 1999). As may be anticipated when the users are expected to actively contribute their knowledge, cultural resistance may be great. In many organizations, information and knowledge are not considered organizational resources to be shared, but individual competitive weapons to be kept private (Davenport, 1997). Organizational members may share personal knowledge with a certain trepidation — the perceived threat that they are of less value if their knowledge is part of the organizational public domain. To date, the literature on knowledge sharing has been largely prescriptive. With this special issue, I am pleased to include two articles that empirically examine the issue of knowledge sharing.

The first article sets forth theoretical propositions concerning knowledge sharing and tests the propositions using empirical data. Sirkka Jarvenpaa and Sandy Staples, in “The use of collaborative electronic media for information sharing: an exploratory study of determinants” extend the information sharing theory developed by Constant et al. (1996) to the context of sharing via collaborative electronic media. Using survey data gathered from 1125 users of collaborative media in an Australian university, Jarvenpaa and Staples examined individual perceptions of the factors that influenced their use of collaborative media to share their knowledge.

A second article in the special issue asks a similar question but considers different factors of influence and, rather than developing propositions to examine, uses open-ended questions to explore the issue. Molly Wasko and Samer Faraj’s appropriately titled “Why people participate and help others in electronic communities of practice” examines both why individuals share in an electronic community and why members do not share. Using data from three Usenet newsgroups, Wasko and Faraj used a survey of open-ended
questions to ascertain the reasons prompting individuals to share, or to withhold, their knowledge.

Whereas the Jarvenpaa and Staples and the Wasko and Faraj articles both focus on an individual level of analysis, with the former examining knowledge sharing among intrafirm strangers, and the latter, knowledge sharing among interfirm strangers, Peter Gray in his article “The effects of knowledge management systems on emergent teams: towards a research model,” examines how KMS can enhance the effectiveness of teams. Gray develops propositions at the team level of analysis concerning how the use of KMS will result in improved knowledge search efficiency, a greater variety of team knowledge, more complete problem analysis, and more effective solution generation. The potential of KMS to improve teamwork in such fashion may then enable greater organizational adaptation effectiveness. Drawing upon the principle of requisite variety to inform the development of propositions, Gray then incorporates the propositions into a research model.

If one compares the major challenges of KM with the assumptions of the application of IT to KM, several discrepancies appear. Among the major challenges of KM are that (1) there must be overlap in context for effective knowledge exchange (i.e. two individuals from unrelated work groups are likely to have different mental models which influence both their communication and their interpretation of information). However, by applying IT to the issue of knowledge transfer, organizations assume that the lack of a shared context does not inhibit the effective interpretation and application of information across workgroups. Secondly, a KM challenge is that individuals do not necessarily know what they need to know. The application of IT to KM assumes that individuals know what they need to know, but just not where to find it. Thirdly, a KM challenge is that individuals often lack time and incentives to share knowledge. The application of IT to KM assumes that experts in the firm, if located by someone in need of knowledge, will readily share knowledge with intrafirm strangers. Lastly, a KM challenge is that hoards of knowledge are not useful, only that which is actively processed by individuals. The application of IT to KM assumes that the more knowledge that is available in explicit form, the more it will be used. Such discrepancies may account for some of the failures of KM initiatives to result in significant organizational improvements. Indeed, with such potential gaps in KM challenges and IT implementation, much work needs to be done to help us understand the factors that contribute to successful KM implementation efforts. It is a pleasure to include three articles that, generally speaking, deal with the issue of ensuring that KM efforts are successful.

In a comprehensive data gathering effort that involved the better part of 8 months in the field, Ulrike Schultze and Richard Boland in their article entitled “Knowledge management technology and the reproduction of work practices,” examine the situated work practices of the targeted user group in a KMS effort in a Fortune 500 manufacturing firm. Employing Bordieu’s Theory of Practice as a theoretical lens to interpret the incongruence between the work practices and the system, Schultze and Boland offer an enlightening commentary into the possibility of failed KMS implementation efforts.

Also addressing the issue of congruence between KM initiatives and work in practice is the article by Yasmin Merali entitled, “Individual and collective congruence in the knowledge management process.” Merali develops a Cognitive Congruence Framework
to offer insight into the means by which knowledge capabilities may be leveraged, or, should incongruence exist, may not be leveraged as anticipated. Merali then uses the framework to interpret the KM implementation efforts at three case sites, two of which are shown to encounter incongruence and one of which is shown to effectively achieve congruence.

Whereas Schultze and Boland, and Merali, offer specific theoretical insight into KM implementation efforts, Holsapple and Joshi use data gathered from a Delphi study of KM practitioners and researchers to validate a prescriptive framework of more general factors that influence organizational KM initiatives. The framework includes three classes of influences: environmental, managerial, and resource, out of which the authors devote the most attention to managerial influences, over which managers are likely to be able to exert the greatest influence. From the validated framework, the authors then offer a checklist for KM practitioners and derive interesting research questions for KM researchers.

The seven articles in this special issue represent a range of topics and methodologies, as was encouraged in the call for papers. The papers span the range of pure theory (the Gray article), theoretically guided survey data (the Jarvenpaa and Staples article), descriptive survey data (the Wasko and Faraj article), longitudinal field data (the Schultze and Boland article), case study data (the Fowler and Merali articles), and data from the Delphi method (Holsapple and Joshi). Likewise, the articles take unique angles to sundry interesting KM research issues. Nevertheless, much KM research remains to be done and the articles offer both a foundation for future study as well as insight into various avenues of future research. It is hoped that collectively, the articles will spawn continued interest in KM research.

Papers were submitted from 10 countries and reviewers for the special issue came from as diverse a background as did the authors. In the end, seven articles were chosen according to reviewer assessments. A special thanks is owed to the 30 reviewers, many of whom reviewed several articles and without whom the issue would neither have attained the quality nor the timeliness that it did. A special thanks is also due to the JSIS editors, Bob Galliers and Sirkka Jarvenpaa, for encouraging the special issue and offering editorial guidance to the guest editor. Finally, a sincere thanks is extended to the authors of the articles for their excellent work in revising their papers according to the reviews. I am very pleased with the resultant pieces and hope that they provide JSIS readers with the same enjoyment and enlightenment upon reading as they have provided me.

References


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