



Editorial

Collaborative work and knowledge management in electronic business

We are in an era of knowledge economy [3,4] and knowledge-based competition [2]. In this era, an organization must be able to secure various types of knowledge assets and maximize their strategic value. To do so, many organizations have begun to reexamine and rearrange their business strategies, process, information technologies, and organizational structures from a knowledge perspective [1]. This task has been complicated in the Internet-enabled business environment. With the advances of Internet-related technologies, the intricacy of the worldwide economy is fast changing. Lower cost, customized products/service, and quick response have become the critical success factors for most businesses. More and more competing firms are adopting collaborative work and knowledge management to create and maintain these critical success factors. Collaborative works within organization or between organizations could not only share the work based on each member's expertise, but also achieve a seamless information flow among the collaborative team members. Such sharing of knowledge has proven to improve productivity and decision quality of the participating organizations. In order to have effective collaborative work, the management of knowledge is essential and critical. The practice of knowledge management has been around us for many years. The advent of Internet digital economy has made it even more difficult to manage knowledge for one organization alone, not mentioning among partners or the entire supply chain network. As more and more companies are integrating electronic commerce into their businesses, collaborative work and knowledge management are increasingly important to electronic businesses. The purpose of this special issue is

to explore effective and innovative use of collaborative work and knowledge management in the electronic business era. After our initial screening, 45 out of 60 submitted papers were chosen for the double-blind review process. With the help of over 60 reviewers, seven quality papers are selected to be included in this issue. The selected papers cover many knowledge management and collaborative work-related issues, such as organizational memory, virtual collaborative work, knowledge map, trust and conflict, intelligence of team, group support argumentation, and distribution network optimization.

In the first paper, 'Organizational memory information systems: A transactive memory approach', Professor Dorit Nevo and Professor Yair Wand identify five difficulties for members of the organization in retrieving and using knowledge that resides in organizational memory. They propose the use of information technology to extend the transactive memory approach popular in small group research to large groups. Their new system contains a component of 'meta-knowledge'. Furthermore, they examine the potential benefits of such innovative system and provide some empirical support for these benefits reported in the literature.

In the second paper, 'Utilizing knowledge context in virtual collaborative work', Professor Hyung Jun Ahn and his colleagues elaborate on the difficulty in using contextual knowledge under virtual organization where virtual collaboration takes place. They suggest a knowledge context model for virtual collaborative work to facilitate the creation, management, and utilization of knowledge. A Web-based collaboration system called virtual workgroup support system was designed and implemented based on

the proposed model. The benefits of using the proposed model and the Web-based system are illustrated with examples.

In the third paper, 'NewsMap: A knowledge map for online news', Professor Thian-Huat Ong and his colleagues describe a system that organizes Chinese online news into hierarchical 1D list or 2D map. They conducted experiments to demonstrate that this system can identify news topics better than the human experts in terms of recall rate and precision level obtained from 20 student subjects. They also show that meaningful visual cues in the knowledge map display could reduce the time needed for task completion.

In the fourth paper, 'Trust and conflict within virtual inter-organizational alliances: A framework for facilitating knowledge sharing', Professor Niki Panteli and Professor Siva Sockalingam discuss two inherent issues central to knowledge sharing among different organizations. They present a generic framework for understanding the dynamics of trust and conflict within the context of virtual inter-organizational alliances. Three distinct structural forms of virtual alliances, namely, star-alliance, value-alliance, and co-alliance, are examined. They further recommend the strategies for generating trust and minimizing dysfunctional conflict in such organizational settings.

In the fifth paper, 'A new collaborative system framework based on multiple perspectives approach: IntelliTeam', Professor Ibrahim Cil, Professor Oguzhan Alpturk, and Professor Harun R. Yazgan review the individual and group decision-making environments. They describe a new decision support system that has the same intelligence as human team members, thus called IntelliTeam. This system provides a multiple-perspectives approach and an expert knowledge support to decision making. It also improves communications among individuals in a group. They further demonstrate the application of IntelliTeam to the selection of ERP systems for a hypothetical firm.

In the sixth paper, 'Frame-based argumentation for group decision task generation and identification', Professor Pengzhu Zhang, Professor Jingle Sun, and Professor Hsinchun Chen describe a group argumentation support system (GASS) that applies a frame-based information structure to electronic

brainstorming (EBS). This system supports group decision-task generation and identification. The authors present a case study about an import and export company of electrical equipment in Xi'an of China and demonstrate the system using a prototype with a two-layered structure.

In the final paper, 'Multi-criterion genetic optimization for due date assigned distribution network problems', Professor Felix T.S. Chan Professor and S.H. Chung apply analytic hierarchy process and genetic algorithms to optimize demand allocation and transportation problems before optimizing a production schedule. The multi-criterion genetic optimization methodology they described is capable of taking trade-off between earliness, on time, and tardiness of delivery and optimizes the collaboration schedule for each entity in a distribution network to fulfill the customer demands.

In closing, we are very honored to be the guest editors of this special issue. Special thank goes to Professor Andy Whinston, Editor-in-Chief of Decision Support Systems, who has provided strong support for this special issue. To all the staffers in the editorial office and Elsevier, we deeply appreciate their support in the production process. Our most sincere thank goes to all the authors who contributed their works to this special issue. Without them, this special issue would not be possible. We also would like to thank all the reviewers for their efforts and their valuable comments. Although the review and editorial processes have gone much longer than we have anticipated, we have learnt a lot from the processes and from the contents of all the papers submitted. Finally, to all readers of this special issue, we hope the papers included herein would help you significantly in your research endeavor.

References

- [1] T.H. Davenport, S.L. Jarvepaa, M.C. Beers, Improving knowledge work processes, *Sloan Management Review* 37 (4) 1996, pp. 53–55.
- [2] P.F. Drucker, *The Post Capitalist Society*, Butterworth-Heinemann, Oxford, 1993.
- [3] I. Nonaka, A dynamic theory of organizational knowledge creation, *Organization Science* 5 (1) (1994) 14–37.
- [4] I. Nonaka, H. Takeuchi, *The Knowledge-Creating Company*, Oxford Univ. Press, New York, 1995.



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