

## ***Introduction***

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This special issue of the *International Journal of Human-Computer Interaction* is on Enterprise Resource Planning (ERP) and it covers the management, social, and organizational issues involved in ERP implementations. An ERP system is a multi-module application software package system that integrates key business and management processes across an enterprise. It serves as a backbone for the enterprise and helps manage the important aspects of a business, including procurement, order tracking, materials management, product planning, manufacturing, human resources, and financial management.

Among the most important attributes of ERP are its abilities to:

- ❖ Automate, standardize and integrate an organization's business processes
- ❖ Share common data and practices across the entire enterprise
- ❖ Generate and access information in real-time

ERP provides a total, integrated software solution to manage an organization's core business and information-processing needs. It supports a process-oriented view of the business, and increases the efficiency and effectiveness of enterprise-wide business processes. Despite the promise of ERP, difficulties and high failure rates in implementing ERP systems have been widely reported. Although some of these problems arise from the technical aspects of the system, the majority of these problems and failures result from management, social, and organizational issues. For ERP implementation to be successful, these issues must be managed. This special issue will address these issues by focusing on the study of *relationships and interactions between humans and computers in the ERP context*.

The implementation of ERP software packages poses significant challenges to organizations. ERP implementation is not only costly but is also a high-risk project. Although ERP software is expensive, an even more substantial cost is consulting. Furthermore, businesses are expected to change their business processes to fit the software to take full advantage of the "best practices" offered by the ERP system and to facilitate future upgrades. Issues relating to ERP implementation problems and challenges are highlighted and studied by Nah, Zuckweiler, & Lau.

Based on an extensive review of the literature, Nah, Zuckweiler, & Lau (this issue) identified eleven critical success factors in ERP implementation. They evaluate the degree of criticality of these eleven factors in a survey administered to Chief Information Officers of Fortune 1000 companies. The results suggest that the top five critical success factors are: top management support; project champion; ERP teamwork & composition; project management; and change management program & culture. The next set of important factors is: communication, business plan & vision, business process

reengineering, software development, testing & troubleshooting, and monitoring & evaluation of performance. The survey results are largely consistent with the literature. The results enhance our understanding of the key factors leading to ERP implementation success and failure. Appropriate resources should be allocated to each of these factors to reduce the likelihood of ERP implementation failures.

Haines and Goodhue (this issue) analyze the working relationships between the implementer and consultants, and their impact on ERP implementation outcomes. ERP implementations involve not only internal personnel (e.g., information systems staff, functional core members, managers and users), but also external parties such as ERP vendors, third-party vendors, and consultants. The partnership and working relationships between the different parties can have a significant impact on ERP implementation. Haines and Goodhue examine the role of consultants, and the relationship between the consultants' levels of involvement and ERP implementation outcomes. They also investigate the degree to which the implementer's level of knowledge can affect consultants' behavior and the project outcomes. Their study not only increases our understanding of the challenges involved in managing ERP projects but also provides a better understanding of the implementer-consultant relationships based on the agency theory.

Al-Mashari (this issue) examines change management program & culture, and project management of ERP implementation. He proposes a process change-oriented model for ERP that comprises the following five aspects: change management, project management, strategic planning, continuous process management, and technology management. The model is illustrated using examples and cases from the literature. The proposed model can be used as a framework to guide future research on organizational and management issues of ERP (or any other large-scale information systems) implementation, particularly from the change management perspective.

Siau and Messersmith (this issue) assess the innovation and creativity aspects of ERP implementation in a public organization. The case study was carried out at the four campuses of a public university system that have recently implemented an ERP system. The innovation strategy model was applied to analyze and explain the creative outcomes of the ERP implementation. They conclude that some of the factors in the innovation strategy model, such as performance measures and collaborative market penetration, are not suited for analyzing the creative potential of a non-profit organization. This research provides an assessment of the application of the innovation strategy model for analyzing a large-scale information systems (in this case, an ERP) implementation.

Soh, Sia, Boh, & Tang (this issue) investigate misalignments in ERP implementation, which arise due to incompatibilities between the embedded structures of ERP and the implementing organization. They found that misalignments are the result of the tensions between the forces of integration and differentiation, process-orientation and functional specialization, flexibility and restrictiveness, and packaged versus organizational domain specificity. This typology can be used to analyze potential

misalignments, conceptualize the ways to deal with misalignments, and assess the trade-offs when dealing with misalignments in ERP implementation.

Holsapple and Sena (this issue) analyze sixteen decision support characteristics of ERP systems. Their survey results indicate that ERP systems provide a substantial level of decision support characteristics. Characteristics that are perceived as moderately extensive include providing a repository of knowledge and mechanisms to facilitate communication. Characteristics that are viewed as less extensive include providing private knowledge repositories and delivering knowledge to meet unanticipated needs. They also examine differences in decision support perceptions among demographic groups. The findings provide insights on areas of decision support practices that might need improvement in ERP systems.

This special issue covers management, social, and organizational issues of ERP from multiple perspectives. The six papers in this special issue, as a whole, provide an enhanced understanding of the interactions among the various stakeholders, and between the stakeholders and ERP systems. ERP has traditionally focused on the back-end integration of a business, but has shifted to the front-end in recent years. Future research should investigate these new frontiers for ERP, which include electronic and mobile commerce/business, supply chain management, collaborative commerce, and customer/supplier relationship management.

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