Editorial

Editorial introduction to the special issue on: transfer and diffusion of IT for organizational resilience

In a turbulent world where companies are trying to realign their resources faster than the competition, resilience is defined as the capability to absorb strain and recover from untoward events through continuous reconstruction (Coutu, 2002). Resilience implies a capacity to be robust under conditions of stress and change. It can be achieved by creating and maintaining cognitive, emotional, relational, or structural capabilities sufficiently convertible and malleable to cope with a dynamic environment. In the competitive marketplace, many countries are making the transition from technology-importing, efficiency-based development to innovation-based development. Organizations located in so-called '1st world' economies are increasingly concerned with making local enterprises more resilient in their current location and firms in '3rd world' economies are keen to establish and retain knowledge-based economic activities.

Although innovation is a key aspect of IT, the technology being adopted and used may result in maintaining *status quo.* For example, today organizations rely increasingly on standard software packages. An excellent example is the widespread implementation of Enterprise Resources Planning (ERP). These information systems support a wide range of functionality for core business processes across the value chain, for example, order processing, inventory control, production, procurement, and accounts payable. While an ERP application is often tailored to an organization's specific needs, the application still contains a high degree of functionality that is the same across organizations – and even industries. Organizations may perceive that the adoption of ERP is necessary for efficiency. And, the successful implementation of ERP can control the strains of flux and increase the organization's capacity to handle untoward events through parameter setting, module choice, and collaboration with other organizations with similar systems in the up- and down-stream value chain. However, this same efficiency can also contribute to a lack of ability to create and support business value. This is precisely because 'having what your neighbor has' does not foster uniqueness or create strategic advantage. Thus, resilience as an organizational design principle should not be viewed simplistically. Care must be taken to understand resilience holistically. This is especially important since the roles of resilience, innovation, and control will continually change, interdependently with organizational goals and context.

This special issue of the *Journal of Information Technology* is focused on how IT innovation can contribute to making organizations more resilient. Commercial organizations are trying to make sense of the competitive environment and quickly generate new strategic options. Public organizations are struggling to meet societal needs for innovative information services. IT staff have spent much of their energy improving transactional efficiency. IT now needs to be seen as a positive force for making business innovation resilient. Issues such as IT organizational design, social networking, diversity, improvization, and rich media are all likely to advance our understanding of resilience in this context, and account for an organization's need to sustain innovation.

Promoting corporate resilience matters because of the huge economic and social costs of corporate decline and failure. Too often, large, venerable companies linger in a coma for years before dying, as Marshall Meyer, professor of management and sociology at the University of Pennsylvania's Wharton School of Business, and Lynne Zucker, professor of sociology and policy studies at the University of California, Los Angeles, indicate in Meyer and Zucker (1989). The US and Europe are littered with once thriving industrial cities laid low by the inability of large local employers to adapt to new technologies, globalization, or competition.

Resilience is concerned with how organizations manage their activities in such a manner as to anticipate and circumvent threats to their continued existence. There are a number of behavioral characteristics exhibited by resilient organizations: (i) a sensitivity to changes in the organization's operating environment (Sheffi, 2005); (ii) a flexible, adaptive decision-making process (Malik, 1998); (iii) a willingness to openly confront difficult issues such as power and control; and (iv) an organizational culture that is supportive of change.

The importance of an organization's relationships with other organizations in its economic environment is raised in Whelan's article on 'Knowledge exchange in electronic networks of practice; towards a conceptual framework.' Whelan examines electronic networks of practice where the sharing of practice-related knowledge occurs primarily through computer-based communication technologies. This conceptual paper posits that there is a relationship between the structural properties of electronic networks of practice and successful knowledge exchange and uses social

network theory and the knowledge-based view of the firm as theoretical underpinnings. The research contributes to the development of a new theoretical framework by addressing the relationship between electronic network communication structure and knowledge flows.

Costello and Donnellan also address the importance of situation awareness in 'The diffusion of WOZ: expanding the topology of IS innovations.' They show that resilience is critical to maintaining B2B and B2C relationships. The paper focuses on speech-enabled business applications that are characterized by complex implementations which bring together language-processing technologies, applications development, and end-user psychology. The Wizard of Oz experiment is a useful technique for simulating and building human–machine prototypes to ensure successful deployment of the completed service. This practitioner report proposes simplification and diffusion of the methodology to meet the growth in demand for automated e-business transactions.

Decision-making processes are scrutinized in Henriksen and Damsgaard's research on 'The dawn of E-government – an institutional analysis of seven initiatives and their impact.' This empirical study builds on the observation that the objectives for implementing e-government are often defined but the means for fuelling the adoption and diffusion of e-government, as expressed in policy statements, are typically less clear. The analysis includes seven cases in Denmark over a period of 10 years. The authors conclude that the early approach of offering 'carrots' did not work. Specific instances of e-developments simply ran into severe problems and disappeared. The recent eDay initiative employed the principles of the 'whip' and the 'voice.' The effort included central push of idea, specification of development approach, a homogeneous learning approach, and marketing of eDay benefits. Although not without problems and challenges, the eDay approach has resulted in successful implementation and use.

Cho, Mathiassen, and Robey also examine how to balance competing and contradictory pressures in 'The dialectics of resilience: A multi-level analysis of a telehealth innovation.' They use a dialectic analysis of a telehealth innovation to criticize the simplistic portrayal of resilience as a positive capability that allows individuals and organizations to thrive in dynamic contexts. Their multi-level analysis depicts resilience as a dialectical process in which individuals and organizations exhibit resilience in adopting the telehealth innovation. While organizational resilience facilitated swift and successful adoption, it also created tensions that endangered further diffusion and the long-term sustainability of the telehealth innovation.

Issues of power and control arise in Ignatiadis and Nandhakumar's study on 'The impact of enterprise systems on organizational resilience.' The authors describe how enterprise systems are used to facilitate integration and data exchange between departments in a company case study. The implementation of the system required the use of data access and control mechanisms to ensure data integrity and security. The authors suggest that the control mechanisms create power differentials in the organization, which have the potential to increase rigidity and reduce flexibility and resilience. On the other hand, enterprise systems can cause drift – from the unexpected conse-

quences of these power differentials, and how people are perceived in solving a problem within the enterprise system. This reduction in control may serve in some circumstances as an enabler to organizational resilience.

Organizational culture and, in particular, the politics associated with IT diffusion are explored in Wainwright and Waring's article on 'The application and adaption of a diffusion of innovation framework for information systems research in NHS general medical practice.' This conceptual and empirical paper employs Rogers' diffusion theory as its starting point. The authors proceed with an analysis of published articles in agreement and in disagreement with Rogers' theory to derive a theoretical framework for studying adoption and assimilation processes in the British Health sector. Their analyses of practices within Primary Care Trust are used to refine their framework. They conclude that information communication technology innovations are politically constrained, perceived, and motivated.

The ability to change through renewal is dealt with in Wastell, McMaster, and Kawalek's study 'The rise of the phoenix: methodological innovation as a discourse of renewal.' This conceptual and empirical study observes that resilience refers to the ability of individuals and organizations to cope with change through a continuous process of renewal. They assert that BPR was introduced with the hope of 'fitting the bill' but has utterly failed. The authors recount the history of one UK government technically oriented IT department seeking to reinvent itself. This case analysis is used to illustrate the employment of BPR into a complex innovation process. The authors observe that, above all, a sense of crisis prevailing at the outset was decisive: an impending threat was interpreted as an opportunity to develop a new strategic identity.

Change is also central to Bunker, Kautz, and Nguyen's article 'The role of value compatibility in IT adoption.' The authors propose a framework to (a) determine value compatibility analyzing the organization's and information system's structure, practices, and culture and (b) explore the value compatibility of an organization with its adopted self-service computer-based information system. The case study was conducted to determine the congruence of an organization's value and IT value compatibility. The study was carried out in a single organization where the authors observed a high correspondence in the organizational structure and practice dimensions. Disparities were found in self-service acceptance and training issues.

Brian Donnellan,
Tor J. Larsen,
Linda Levine

References

Coutu, D. (2002). How Resilience Works, *Harvard Business Review*, May, pp. 46–50.

Malik, L. (1998). Putting Organizational Resilience to Work, *Industrial Management*, November-December, pp. 8–13.

Meyer, M.W. and Zucker, L.G. (1989). *Permanently Failing Organizations*, Newbury Park, CA: Sage Publications.

Sheffi, Y. (2005). *The Resilient Enterprise: Overcoming Vulnerability for Competitive Advantage*, Boston: MIT Press.