INFORMATION SYSTEMS DEVELOPMENT FOR THE KNOWLEDGE ECONOMY

Guest Editorial

This Special Issue covers a range of topics pertinent to Information Systems Development in the context of rapidly changing social, economic, technical and industrial landscape. The development of information systems has paralleled technological developments and the deployment of that technology in all areas of society, including government, industry, community and in the home. More recently the convergence of information and communications technologies (ICT) has presented a challenge for the ISD profession in terms of accommodating mobility, access, interoperability, distribution, connectivity, media and the diversity and volume of information.

IS development, both as a professional and academic discipline, has responded to this challenge through methodologies, tools and theory development. As a practice-based discipline, ISD has always promoted a close interaction between theory and practice and in particular has strived for reflective practice. This reflective practice has been influential in setting the ISD agenda that has largely focused on the integration of people, processes and technology as well as their context. Academically, the challenge has been to accommodate the broad range of concerns within a single disciplinary area. Current debates within the IS community are a testament that IS as a discipline remains a work in progress.

The context in which the academic and professional debates occur has been the changing social and economic environment characterised by new and emerging economic theories as well as social and industrial restructuring. Some of the factors driving the shift away from goods and services to a knowledge-based economy are:

- the re-conceptualisation of geography (globalisation);
- an alternate temporal paradigm (24/7);
- the dynamics of business relations (networks of alliances and partnerships);
- the ubiquity of convergent technologies

The organisational response to these factors has been a move towards global enterprises with very flat structures that, in principle, enable enterprises to react rapidly to changes in their operating environments. Organisations operating in the knowledge economy require the capability to access and utilise large volumes of information without the constraint of media, geography or time. A critical factor of this capability is the speed with which organisations productively process such information. To date, technology has been effectively deployed to manage information that is encoded in procedures and information stores. However, in the changed environment there is an implied needs for organizations to innovate and learn, and to use ICT to support these activities.

The papers in this Special Issue represent a small sample of the broad ISD agenda, ranging from theoretical explorations, to methodologies to case studies, to address organisational requirements in this changing environment. The papers, individually and collectively, attempt to address elements of the dilemma of ISD in the knowledge economy.

Origins of this Special Issue

This special issue originated from the 12th International ISD Conference held in Melbourne in 2003. Twelve papers presented at this conference were identified by reviewers and Associate Editors as potential contributions for this Special Issue. The authors were invited to re-submit a revised journal paper that extended their original paper with more recent research to ensure at least 40% new content. All submitted papers were reviewed by at least two independent reviewers who had not previously reviewed the authors' conference papers. Based on these reviews, we selected 6 high quality papers. The accepted papers were revised in line with the reviewer comments and these changes were endorsed by the editors.

The Papers

We would like the reader to appreciate the range of topics covered in this Special Issue and the insight these papers provide into the complexities of ISD. Moreover these papers present a cross section of Australian and European viewpoints that also includes a practitioner view.

The first paper by Helen Hasan, "Information Systems Development as a Research Method", draws on design science to argue that ISD can be a research method in certain situations. The paper extends action research to the design and use of information systems with the aim of understanding the development process as well as the organisational issues that the information system is designed to address. This research method is illustrated through a case study. This paper makes a important contribution to current debates about the nature of IS as a discipline.

Paul Taylor's paper, "Vernacularism In Software Design Practice: Does Craftsmanship Have A Place In Software Engineering?" , highlights the tension between the professionalism of software engineering and the need for a crafts approach that relies on individual knowledge, skills and experience. This tensions is presented as an explanation for the failure of engineering based process models of ISD. The paper goes on to argue that ISD methods needs to incorporate the informality and creativity of the crafts in order to successfully design and development complex information systems.

The next paper by Lejla Vrazalic, "Evaluating Distributed Usability: The Role Of User Interfaces In An Activity System" presents a critique of existing approaches to usability and proposes an alternative approach. This approach does not focus on the artefact, the qualitative and quantitative attributes of a computer system, rather it addresses the activity system in which the artefact is embedded. This approach is presented as an alternate HCI evaluation method.

The fourth paper by Jesper Holck and Niels Jørgensen, "Continuous Integration And Quality Assurance: A Case Study Of Two Open Source Projects", raises important issues for ISD in decentralised environment that has implications for globally distributed projects. Significantly they use quality assurance as an analytical lens to study this process and highlight the potential contradictions between commercial imperatives for centralising control and the organisational imperatives to allow developers to work independently.

Jacek Unold's paper, "Modeling The Dynamics Of An Information System", presents a mathematically defined model of the dynamics of an information system in order to understand the behaviour of its social context. The approach is illustrated through a model of the stock market.

The final paper by Witold Abramowicz, Tomasz Kaczmarek and Marek Kowalkiewicz, "Supporting Topic Map Creation Using Data Mining Techniques", highlights the utility of computer science methods for processing information within an information systems. The paper addresses the creation of sematic structures from unstructured information sources and the automation of this process. This is an issue of particular concern for new media , text repositories and of course the internet.

Acknowledgement

We would like to thank all authors for an interesting and broad range of submissions. This Special Issue would not see the light without major effort from a dedicated team of reviewers. We would like to thank the group of 17 reviewers for their thorough and constructive comments that were the basis for improving the quality and readability of the original submissions. Both the editors and authors appreciate their hard work.

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AJIS Special Issue Guest Editors