Preface

INTRODUCTION

The overall mission of the International Journal of Sociotechnology and Knowledge Development (IJSKD) is to provide a practical and comprehensive forum for exchanging research ideas and down-to-earth practices that bridge the social and technical gap within organizations and society at large. The chapters highlighted in this book are exemplars of some of these ideas in practice.

The journal also provides a forum for considering the ethical issues linked to organizational change and development encouraging interdisciplinary texts that discuss current practices as well as demonstrating how the advances of - and changes within - technology affect the growth of society (and vice versa).

When looking at the chapters that have been submitted to the journal and that are now entered into this book for this edition, they fall into five main categories.

The first category begins with exploring the literature to identify the themes that sociotechnical thinking looks at. This chapter sets the scene for the chapters that follow.

In Exploring Meaning, the authors identify the major contributors to thought and the theory base and thus providing for scholars a useful base for identifying suitable theory and the timeline of the development of this theory. The first of this series was published last year in the previous book in this series and in Edition 1 of the International Journal of Sociotechnology and Knowledge Development.

This section of the book then continues with considering some of the organisational impacts of change and leadership with, firstly, the chapter by Martin Johnson of the Thalidomide Trust; secondly the chapter by Peter Duschinsky considering the Change Equation in project management; and thirdly, the chapter by myself, Peter Smith, and Dee Alwis on how to organise communities within organisations for successful innovation. Peter follows this with a discussion on the factors that affect success or failure in knowledge management in an organisation.

The book then moves on to considering the issues that employing knowledgeable and talented individuals brings - the war for acquiring this talent as described by Colomo-Palacios, Ruano-Mayoral Soto-Acosta, and Garcia-Crespo.

The next sections of the book consider the impact of technologies and communities both local and global, from the nation to the individual, beginning with the chapter by Albert and Flouroy and the theory of New Growth, showing how strategically used ICTs are allowing local communities to be contributors in global markets. This is followed by the Case of Botswana as described by Joseph as a knowledge based economy.
Chapters Nine to Thirteen all consider the impact of social networks and online communities in various formats, and this is a topic that will be discussed again later after detailing the contents of the book in more depth.

There are two final chapters to cover in this preface, which stand alone in their topics. The first is Performing Charlotte by Light, Kleine, and Vivent; and finally a chapter by Nicholls and Cargill, concerning how to achieve Best Practice in Manufacturing by using tacit knowledge and Mixed-mode Modelling.

The preface will now describe these 15 chapters in more depth and add comments on the subject matter and why they are important to the sociotechnical community and to those utilising knowledge in organisations.

**COMMENTARY ON CHAPTERS**

The first chapter in Section One of this book is a literature review and is the second of its kind, the first that was published looked at a different set of papers and journals in the last edition in this series.

In this chapter, there is a trend that appears to show a revival of interest in the ideas of sociotechnology during the 1990s. This trend seems to coincide with the expansion of work systems and the realisation that these new systems were as prone to failures or limitations as early technical system implementations. Authors have gone back to the theory of how technology impacts on work and job design, pioneered by the Tavistock Institute in the 1950s. This was then used to explain issues surrounding such diverse topics as eBusiness, health technologies, mass customisation, call centre operations, and mobile phones. The chapter looks at the development of the theory and how the papers have applied it, exploring the difference between the early ideas and the later, in specific fields of study beginning with Human Resources in the very early years and moving into Job and Work Design and Operations Management in the middle years; with the emphasis moving towards Information Technology in the latter years, and most recently, Knowledge Management and Philosophy.

The chapter shows that in total, socio-technical article publishing has recently recovered from the relative decline of the 1980s and 1990s. Within the socio-technical area, the topics of Work and Technology are receiving increased attention in the more recent sample explored. At the same time, the study of Personal and Group Behaviour, and of Change, as well as the study of major Stakeholder Groups, is waning.

The success of the journal International Journal of Sociotechnology and Knowledge Development and its related LinkedIn site, is an indication of the reviving interest in sociotechnical thinking, moving into a world ever more externally controlled by technology.

Of course, one of the more interesting aspects of this journal is that it has a wide range of coverage of topic areas, which permits it to explore subjects that do not neatly fall into fields of study, such as Human Computer Interface or eBusiness, and there is appeal to a wide audience, bringing unusual subject matter to their attention. And indeed, authors are able to encourage practitioners to contribute their experience as well. That said, the next chapter in Section One is not unusual, but looks at how to create visionary leadership teams; however, it is written by a practitioner. Dr. Martin W. Johnson, BD, PhD, MSc, FRSA, is the Director of the Thalidomide Trust UK, which was established on the 10th of August 1973, with the object of providing support to those people who had disabilities caused because their mothers had taken the drug thalidomide during pregnancy. In this chapter, Dr. Johnson looks at the affective factors in Organizational Behaviour.
The chapter explores the possibility that this concept offers a way of developing social synergy in work groups, and considers this in the context of socio-technical systems.

The chapter reports on a 3E’s research study, which tested the 3E’s concept - this concept is based on the categorisation of people in the workplace into roles labelled “Envisioners,” “Enablers,” or “Enactors.” The importance of the affective component in motivation and decision-making is identified, which shows that it corresponds with measurable differences of motivational need, personality factors, and decision-making between individuals. The study also shows that the characteristics of successful group decision-making are also linked with the 3E’s differentiation. Therefore use of the 3E’s model offers the possibility of improving person-role fit, and thus organisational performance, as it proposes an integrated design for the selection and operation of teams, offering a person-role fit, optimal decision-making behaviour, and consequent social synergy.

This is especially important as while leadership teams traditionally develop over a period of time, the range of current working practices precludes the direct personal contact and relationship-building that normally precedes and informs appointments into organisational roles. This includes such things as online collaborative work groups or geographically-separated teams working on short-term projects for multi-national organisations through, for example, using Enterprise Information Systems and other social-technical systems. It is clear that current working practices impact on the training and development of managerial staff due to their lack of exposure to f2f contact as opportunities to meet counterparts across the world in real-life as opposed to through a technical intermediary.

Following this chapter is a discussion relating the issues of project management and complexity and how better to predict success. The Change Equation, according to Peter Duschinsky, relates to the social/culture and technical/process management capability of Bostrom and Heinen’s (1977) work system model and good interaction between the social and technical systems. Paying attention to either system on its own will, he argues, create problems and barriers to success.

Considering social and technical systems and their interactions within organisations is again the focus of the next chapter which the editor co-wrote with Peter Smith of the Leadership Alliance, a consultancy organisation with which the editor has a close relationship, and Dr. Dee Alwis. The chapter looks at the social and community interaction necessary for innovation to flourish and explains the role of entrepreneurs in forming Communities of Innovation (CoInv) based on innovation champions and their networks. It is argued that right to market is provided for organisations by future innovation and that this can only be provided when system capabilities are closely linked. This chapter is part of the argument, which can be followed further in the paper Coakes, Smith, and Alwis, (2011).

The fifth chapter in this book is another paper written by Peter Smith, looking at the affective factors for successful knowledge management. It looks further at the issues surrounding organisational cultural systems and the impact on these systems of personal factors that may often be unconscious. These beliefs, emotions, attitudes, and instincts are often unrecognised when considering how knowledge management can be implemented, and yet, they have a very strong effect as to how or why and even who may take part in such implementations and as to its success.

The final chapter in this section of organisational discussions looks at the importance of retaining the knowledge of, and the knowledge workers themselves in particular in high-tech organisations. Competence evidence and a software program that can detect such competence and record it are the focus of this discussion, as the authors say competence evidence recollection is a highly intensive and time consuming task, they describe a tool they have devised called SeCEC-IT that extracts relevant information using natural language processing techniques. It enables competence evidence detection by deducing
SeCEC-IT includes within its technological components such items as semantic technologies, natural language processing, and human resource communication standards (HR-XML).

**Section Two** of this book considers a wider perspective than merely organisations and looks at the global implications of the knowledge society and technology and its link into systems and society.

The first chapter in this section, written by a Canadian and an American, looks at the necessity for local communities to be wired into broadband connectivity for digital transactions for family, education, and leisure and not just business - whether for-profit or not-for-profit. Albert and Flournot argue that being able to connect high-speed computing and other Information Technologies into broadband communication networks presents local communities with some of their best chances for renewal. They also argue that these technologies are no longer niceties for communities but indeed necessities and that communities expect to be ‘wired’ into the broader digital world for family, business, education or leisure. Knowledge workers and the newer workforce, many of whom expect to be able to work from home as well as leisure places- see the phenomenon of coffee shop working that we see so much of - require this capability from the place they intend to live, and thus, in order to attract such members of the community, the locality needs to devise suitable strategies for their own individual circumstances. These applications will need to be sensitive to local needs and particularities and cannot be a generalised application. This chapter demonstrates through the use of case studies of the Intelligent Community Forum how suitable technologies for the locality are enabling such communities to participate in global as well as local markets.

The second chapter in this section looks further at the issue of how communities are developing a knowledge base by considering a larger locality - that of Botswana. The government of Botswana has recognised the need for the country to develop towards a more global economy that is based clearly and recognizably on technical and scientific knowledge rather than its previous dependence on diamonds. This is a radical shift in thinking for all concerned as it means that present economic systems are no longer viable and new systems based around knowledge contributions are needed to be developed. As Joseph puts it, *indigenous knowledge management systems* need to be put in place whilst *not forgetting the potential contribution of indigenous and mythological knowledge*. Scientific and technical knowledge are now being positioned as the vital resources and the main drivers of sustainable development. This chapter surveys the various initiatives that have been undertaken whilst recognizing that future research needs to be undertaken to ensure that harsh challenges, such as a requirement to reduce HIV-AIDS infection rates, a massive unemployment level, and a current overdependence on diamonds, need to be incorporated into the knowledge based economic transformation policies so that this may not steal away the country’s dream. Particularly interesting here is the concept that knowledge management is a key sustainable competitive advantage for a developing country as opposed to the common statement for an organisation.

Next is **Section Three** of this book. This is the section which will be discussed more fully to add additional comments as to the necessity of research into this area. Social technology - or the use of technology in the social setting- affects and develops new social networks. Technology as a social technology must incorporate the classic concepts of sociotechnology in that it must develop through use and user desires, and must operate for the processes they wish it to. Sociotechnical thinking has always said that the technology (within the organisation) must be chosen by the users for the task at hand and that they must have the option to refuse to use any technology or must be able to mould the technology to
perform the tasks in the way that they wish them to be performed. Social technology seemingly answers all these criteria. It has developed through users’ desires - take Facebook as an example. Its rivals have fallen by the wayside as they did not provide the functionality in the way that the users wanted them to. Within organisations - as the papers chosen below argue - users cannot be forced into using social technology in the same that they can be forced into using, say, ERP systems. It must always be optional and thus always within the control of the users as what they do, how they do it, and when even though organisations such as IBM have some rules to tell people what to do with these systems and mandate certain activities, the actual content is always personal and as detailed as the user wishes.

The editor started to develop a discussion on this topic by going to a favourite journal database, Business Source Direct, which covers over 10,000 journals, and looked for recent articles on social technology, limiting the search to those within peer reviewed journals, published from 2009-2011 and with full text available, in order to read them. I got 8 articles in response. It would seem therefore that this is an under-researched area. Indeed, the first article, by Burke and Warner, claimed that the field of Organisational Development had not added anything to the discussion of social technology for many years. The second was a very short article aimed at Chief Finance Officers in which Scott Klosky (2011) argued that all organisations need to utilise social technologies in four very specific ways:

1. To build what he calls ‘rivers of information’. Social technologies permit the aggregation of information and the filtration of information, such that the information presented to employees is useful and valid.
2. Use these technologies to build the Web-facing organisational voice and presence. Use, for instance, Facebook or Twitter, blogs, and podcasts to present the corporate image.
3. Realise that this corporate image is very visible and ensure that the social network formed by these technologies is monitored and mined. Ensure that the corporate image and reputation is that which the organisation wishes to present.
4. Use technology to ‘crowdsource’. This is by permitting a role traditionally performed by an outsourcer (or employee) to be performed by the ‘crowd’ - in much the same way, I would imagine, as Google and other technology companies permit their users to de-bug programs and devise new applications for Android phones.

The third article in the list, by Zuk (2011), continues with this message of using social technology to present the ‘right’ face to the world. Public relations, it was argued, in this - again very short - article must use the technology of the social world such as Twitter and Facebook to its advantage to build a loyal following through these media.

In many ways, the fourth article was perhaps the most interesting, even if again, it was not technically an academic article as it identified the top ‘trending topics’ for 2011 in Public Relations. The Editorial by the journal Public Relations Tactics mentioned social media and technology in two respects - firstly in terms of crisis communication, as social media can both be a help to communicate in crises, but also that social media can create these crises, and awareness of both trends is required.

Additionally it was argued that social technology is very important for organisational and personal branding but that average participants experience social media schizophrenia — as social media adoption and usage continues to climb in 2011, even the average user will struggle to keep up with the increased loading (p. 12).
Steve Radick (2011), in the same journal, compares the organisational intranet to Facebook and Twitter and looks at the frustration that the intranet gives so many users. It should now also be about connecting people to people rather than people to information. Intranets should now deploy social connectivity tools to enable a new way of working within an organisation. Encourage internal blogging for instance through the intranet and focus less on the technology and more on user needs.

Article 5 (Hess, Fuller, and Campbell, 2009) looked at the instance of Recommendation Agents - a hint of the performed persona or avatar here (see discussion below on ‘Performing Charlotte’) as it found that personality (extraversion), vividness (text, voice, and animation), and computer playfulness were found to influence social presence, with social presence serving in a mediating role and increasing user trust in the agent. The use of social technology and its media capabilities affected trust and social presence in these agents and the degree of extroversion displayed by these persona affected the trust in these agents. They were seen as more convincing and appealing to the audience. Social presence, and thus trustworthiness, was also impacted by the use of social media and technology.

Article 6 in the search considered digital museums (Srinivasan, et al, 2009); article 7 was Rosga and Satterthwaite, (2009); and article 8 was Jae-Hyung (2009). This last article echoes some of the aspects of economic growth discussed in Chapter 8 of this book in that new technology, and here it is social technology that is specifically considered and the concomitant knowledge management required to develop it, is seen as basis for economic growth.

Expanding the search to those articles without full text I identified a small number of further articles. The first paper, by James Kohnen, was in fact just a book review of what looks to be not only a book about social technology but one which considers leadership and thus links to Chapter 2 of this book. A further review of the book in Professional Management by David Stephens who says that working with social networking is like any management challenge - first decide objectives and then develop the infrastructure. The author of the book under review - Li (2010) - argues that in practice it is often not the case and that frequently the major stumbling block is the management and its difficulty in understanding the technology of social networking and its power to alter public perceptions. The chapter by Raban, Ronen, and Guy (2011) looks at an individual’s use of social technology in respect to people tagging within an enterprise application; Kreiner et al (2011) consider what happens when social technology facilitates interaction amongst competitors for an architectural prize and this idea is echoed in the paper by Toledano (2010) which also looks at competition and cooperation between professions and professionals as social technology develops; Chataway et al (2010) use a social technology framework in respect of global health developments.

All of these are very diverse applications of the phrase ‘social technology’ and yet none really seem to consider its links to sociotechnology which is perhaps surprising. The editor thus issues a challenge to readers to this preface to look at social technology and considers its relationship to sociotechnology and produce theory and concepts that link the two.

Coming back to this book’s contents, the chapters in Section Three begin with a discussion by Gordon Hunter on how online communities are different from other Internet supported group interactions. In this chapter, Hunter argues Significant benefits are gained from online communities for businesses, NGOs, other community organizations and individuals and so being able to identify the different types of communities and their characteristics is an important stage in developing greater understanding of how virtual communities can contribute to businesses, healthcare, community needs and a myriad of other contexts.
Allan McLay continues with the identification of benefits theme with his discussion of virtual realities. New media, he argues has the capacity to add value to information in a form capable of translation, transformation, and distribution wherever and whenever digital processes and electronic network communication is accessible. Today, this implies virtually any time, anywhere on the globe (Lister et al., 2009).

New media enables a continuing growth in connectivity especially for communities of practice and those communities that utilise these new media may well develop new languages and practices and utilise these media in new and creative ways.

The following three chapters formed a Special Edition within the journal looking at the Net Generation. In the words of the Special Edition Editors, *Members of the Net Generation use the Web differently, they network differently, and they learn differently.*

The Net Generation, they would argue, are natural networkers using the Web extensively and simultaneously with other tasks - they multi-task and work collaboratively.

This Special Issue focused on how the Net Generation acquired and exchanged knowledge. The first chapter, by Carla van de Sande, elaborated on help seeking in the Net Generation, in particular in relation to an educational calculus help forum. She found that open forums can provide efficient, accessible, and collaborative help that allow students to acquire the knowledge they need to resolve problems from assignments. The forums investigated here connect students with volunteer helpers who have the time, knowledge, and willingness to provide assistance with specific problems from the coursework. Carla mentions that although many such forums exist in universities and are a popular source of help for students, they have remained largely off the radar of educational research and thus perhaps also of educationalists. The results of her study indicate that students can receive efficient, accessible, and self-regulated help using these forums and thus make good progress with coursework and assessments in due course can perhaps be improved. It would be interesting to repeat this research on other forms of forums to see whether more, or less, progress is made with non-mathematical forums.

The second chapter of this Special Issue, by Isa Jahnke, presented her findings from a longitudinal study evaluating the use of a university Web platform for students. This was longitudinal study of a Socio-Technical Community (STC) launched in 2002 computer-mediated communication. She found that spaces for computer-mediated communication are important for students regarding informal learning about organizing their own studies. Her chapter concludes that informal learning with a socio-technical community is more effective than without because it supports the individualization of learning in huge groups. Spaces for computer-mediated communication are important for students in relation to their informal learning about how to organise their own studies.

The final chapter that came from this Special Edition is that of Bart Rienties, Dirk Tempelaar, Miriam Pinckaers, Bas Giesbers, and Linda Lichel. These authors offer some insights on knowledge sharing for job recruitment in relation to the use of Social Network sites. They ask the very important question ‘*do students, non-managers, and managers benefit from job offers when they are a member of SNSs such as Facebook or LinkedIn?’*

The study of 386 Social Network Site users showed that users of social network sites with more contacts are more likely to receive information about job openings than others and indeed more information about job openings was transmitted via LinkedIn to professionals than other sites. The authors thus would encourage and train students to use LinkedIn to enhance their employability.

Now to *Section Four* - the last part of this book.

In this section, there are two chapters of a different character from some of the other chapters, and indeed neither are specifically sociotechnical, but rather, they look at the knowledge development aspect
of the journal. In the first chapter, by Light, Kleine, and Vivent, readers hear about Charlotte - who is a performed persona. Performed personae are a very interesting idea and can be likened to an avatar seen on websites.

A performed persona is the concept of a constructed personality with idiosyncrasies and language usage to suggest a social identity (that may be different or an exaggeration of that which is normal). A performed persona is a character creation - perhaps related to Stanislavsky’s method actor acting style (Krasner, 2000) - a stylised recreation of that personality for a purpose, in the case of this chapter, the persona was used to act as a consumer to elicit knowledge and manage expectations. The use of the persona in discussions with the staff of a wine producer in Chile was analyzed and the benefits and challenges identified. The authors concluded that the device offers potential but also requires some confidence and skill to invoke, as might only to be expected, as the actor must not only take on the language and its style of the persona in question but also their mannerisms and actions. It is interesting to contrast this with the use of an avatar on a technology site where it represents, in many cases, an alter-ego or again a constructed personality with the traits and behaviours of that personality being developed as the avatar progresses through their technical world. An artificial sharing of presumed tacit knowledge in other words.

The final chapter in this book looks at tacit knowledge in the context of best practice manufacturing. As the authors argue there is no real optimal solution only best practice and practitioners use their knowledge to create this best practice saying that these types of processes usually rely heavily on the subjective input of the process workers on the shop floor (tacit knowledge). In order to capture this best practice, Communities of Practice are frequently used in manufacturing, providing that they fit the cultures and values or the organisation and employee groups and that they are clearly owned and facilitated by the community of workers whose knowledge is to be shared. CoPs should be presented to the workforce as opportunities to share, compare, and to learn so that a ‘craft’ is not lost or diminished.

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REFERENCES


