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Presented at the
4th International Conference on
Information Systems Management and
Evaluation
ICIME 2013

RMIT University Vietnam
Ho Chi Minh City
Vietnam
13-14 May 2013

Edited by
Dr John Blooma, Dr Mathews Nkhoma
and Dr Nelson Leung
RMIT University
Ho Chi Minh City
Vietnam
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Preface

The Fourth International Conference on Information Systems Management and Evaluation is being hosted this year by RMIT University in Ho Chi Minh, Vietnam.

ICIME provides a platform for individuals researching and working in the broad field of information systems management, including information technology evaluation to come together and exchange research ideas. We hope that this year’s conference will provide you with plenty of opportunities to share your expertise with colleagues from around the world.

This year’s opening keynote address will be delivered by Ivy Wong, Next Mobile Limited, Hong Kong, China. And the second day will be opened with an address from Professor Grandon Gill from the University of South Florida, USA.

ICIME 2013 received an initial submission of 116 abstracts. Of this 34 academic papers, 4 PhD papers and 3 work-in-progress papers have been accepted for these Conference Proceedings as a result of the double blind, peer review process of full paper submissions. These papers come from all parts of the world including Australia, India, Indonesia, Iran, Japan, Lithuania, Malaysia, Morocco, Namibia, Netherlands, New Zealand, Portugal, Romania, South Africa, Sweden, Thailand, USA and Vietnam. So ICIME is set once again to be a truly international conference!

We wish you a most interesting and enjoyable time in Vietnam.

Dr John Blooma
Dr Mathews Nkhoma
Dr Nelson Leung

RMIT University, Ho Chi Minh City, Vietnam
May 2013
Conference Executive
Dr Nelson K.Y. Leung, RMIT International University Vietnam
Dr Blooma John, RMIT International University Vietnam
Dr Mathews Nkhoma, RMIT International University Vietnam

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Dr. Farid Shirazi, The Ted Rogers school of Information Technology Management, Ryerson University, Toronto, Canada
Tony Hooper, Victoria University of Wellington, Wellington, New Zealand
Huan Vo-Tran, Business IT & Logistics, RMIT, Melbourne, Australia
Dr Vince Bruno, Business IT & Logistics, RMIT, Melbourne, Australia

Conference Committee
The conference programme committee consists of key individuals from countries around the world working and researching in the Information Management and Evaluation community. The following have confirmed their participation:

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Biographies

Conference Co-Chairs

Dr Nelson K.Y.Leung is an Assistant Professor at the RMIT International University Vietnam. He is also serving as the Founding President of the Vietnam Chapter of Association for Information Systems (VAIS), an Adjunct Researcher at the Payap University, and an Associate Editor for Interdisciplinary Journal of Information, Knowledge and Management (IJIKM) and International Journal of Intercultural Information Management (IJIIM). Nelson holds a PhD in Information Systems from University of Wollongong. Nelson has published widely in refereed books, journals and international conferences. His research interests include ontology mediation and development methodology, organizational knowledge management, education technology and supply chain management.

Programme Co-Chairs

Dr Mathews Nkhoma holds a Ph.D. in Information Security. His major topics of research are: Zero day attacks and Vulnerability research, Information Systems Security, Transparency in information security system design, Network security investment model, Ethical hacking and Network defence, Network security management, Forensic Computing and evidence recovery including mobile devices, Cybercrime, Identity theft, consumer protection, trust and confidence, Impact of ICT in education. His research has been published in journals such as the International Journal of Information Management and Computer Security, Emerald, International journal of Information Security and Privacy- IGI Publishing. Mathews has international experience in teaching: leading Information systems and computer forensics courses in Africa, Europe, Middle East and Asia at both undergraduate and post graduate level.

Blooma Mohan John is a Lecturer at RMIT International University, Vietnam. She completed her PhD from Nanyang Technological University (NTU), Singapore in 2011. Her research interest is in the area of Search Engines, Question Answering systems and Social Media. She completed her Master of Science in Information Studies from NTU, Singapore in 2004. Blooma obtained her Bachelor of Engineering Degree in Electronics and Communication Engineering from Bharathiyar Univer-
sity, India in 2001. She taught various IT related course at the Middle East College of Information Technology (Sultanate of Oman) and the Government Engineering College (India), NTU (Singapore) and RMIT International University (Vietnam). She was awarded the NTU PhD Research Scholarship for four years and was involved in working as a Teaching Assistant from 2007 - 2010. Blooma has published in various International Conferences and refereed Journals. Blooma is serving as a reviewer in various refereed Journals and as the Treasurer at Vietnam Association of Information Systems.

**Keynote Speakers**

**Grandon Gill** teaches introductory and intermediate courses in programming for undergraduates and also teaches capstone courses in the MIS undergraduate, MS-MIS and Executive MBA programs. He has also taught a variety of IT courses during his tenure at USF, from computer systems concepts to doctoral case methods. He received USF’s Excellence in Undergraduate Teaching Award in 2007. Gill is passionate about using technology as a teaching tool and has studied distance learning, strategy, and practice, alternative course designs, and tools for course development and delivery, all under the general heading of informing science. His research in this area has been published in many journals, including Informing Science, Decision Sciences Journal of Innovative Education, the Journal of Information Systems Education, eLearn, and the Journal of IT Education. He has also published multiple times in MIS Quarterly, the MIS discipline’s leading journal—his most recent article considering the MIS fields from an informing science perspective.

**Ivy Wong** is currently the Chief Executive Officer of Next Mobile Limited. Prior to joining the Group in September 2011, she has over 10 years of experience in online media business and worked as Chief Operating Officer in TVB.com Limited and Senior Director in Yahoo!(Hong Kong and Asia). Ms. Wong has a Bachelor of Commerce degree from University of Toronto, Canada majoring in International Economics and Marketing.
Biographies of Presenting Authors

Hafiza Adenan is a PhD student at Faculty Information Management of MARA Technology University, Malaysia. She has working experience in retailing industry and educational industry. In educational industry, she has experience as a lecturer at private university college in Malaysia.

Nur Syufiza Ahmad Shukor is a senior lecturer in Department of Information Systems, UNISEL and currently pursuing PhD at UTM, Malaysia. Implemented many ICT projects specifically software development projects during previous work in industry. Her current research interests focus on the area of Information Systems and Knowledge Management. She is also a member of AIS and iKMS.

Dr. Fazidah Abu Bakar earned her PhD. degree in Information Technology (IT) from International Islamic University Malaysia on Strategic Information System Planning. She works as an IT government officer and has been involved in various IT implementations in public sector. Currently, she is involved in the Malaysian National Single Window for Trade Facilitation project.

Farshid Anvari BE, GradDipSc, GradDipIT, MACS has over 15 years of experience in software engineering and 12 years of experience in Power Engineering, specialising in hydro system modelling and reliability studies. His research interests include cognitive load, user-centered design, persona ontology and architecting systems that are economical, robust and reliable.

Dr. Bob Barrett is a professor for the School of Business at the American Public University in Charles Town, West Virginia, USA. He lectures both nationally and internationally on the topics of Intellectual Capital, Knowledge Management, and Disability in the Workplace, e-Portfolios, and e-Learning.

Dr Vince Bruno is a Lecturer at RMIT University, College of Business, school of Business IT and Logistics. He holds a Bachelor of Computer Science and a Master in computing (IT), and a Ph.D. His research interests include usability, IT education, databases technologies, application development and solving problem.

Fatima-zzahra Cheffah is a PhD student at the Doctoral Education: Mathematics, Computer Science and Information Technologies, Information Technology and Modelling Laboratory, Faculty of Sciences Ben M’S.ik, Hassan II University - Mohammedia Casablanca, Morocco.
Mr. Duy Dang is doing his research degree – Bachelor of Business (Honours) – at RMIT Melbourne. His research interests focus on information security management and other relevant topics.

Marzieh Faridi Masouleh. I’m come from Rasht. I am 30 years old. I graduated from Islamic Azad University. In bachelor my field of study was software engineering and in Master it was Information Technology Management. Since, September 2012 I am Ph.D. Candidate in Department of Information Technology Management, Science and Research Branch Islamic Azad University, Tehran, Iran and I teach in university.

Nicoleta Valentina Florea PhD Lecturer,, Management-Marketing Department, Valahia University of Targoviste, Romania, with experience in HRM. Master in Marketing (2004) and PhD thesis in Management (HR) (2011) and published 30 articles in HRM, in National and International Conferences and books on HR Management. Member of Research Center of VUT. Received doctoral scholarship, Paris Est, Creteil, Val-de-Marne, France, April-July, 2010.

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Risk Management for Digital Cultural Heritage Information in Malaysia

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Abstract: A crucial component of the nation’s K-economy envisions the availability of digital content exchange or content infrastructure. The idea of providing and presenting information via electronic means and formats truly fascinates managers of information agencies worldwide. This phenomenon obviously affects the thinking and perception of the managers and administrators of libraries, museums, archives and galleries. Presently, cultural institutions are actively connecting their collections to these emerging knowledge networks. They are creating innovative network services based on the digital surrogates of their current collections in a rich, interactive digital environment. A recent study has been made on the digitisation of cultural heritage resources in cultural institutions in Malaysia, namely the National Library, National Archives, National Museum and the National Art Gallery. The four institutions are currently very active in building their digital content and exploring initiatives to deliver the information, however the extent of sustainability of those resources in unknown. The aim of this paper is investigates the digital preservation strategies that are adopted by Malaysian cultural institutions. A multiple case studies approach is used to examine the potential risks to digital cultural resources in four (4) selected Malaysian cultural institutions. Data is collected through structured interviews with information professionals who are involved in digitisation works in the selected cultural institutions. Findings reveal that digital cultural heritage resources in Malaysia is at risk in terms of digitisation policies, selection criteria, cost, staffing, technology, storage, metadata management and copyright. This study is very significant to professionals who are involved in archiving the digital cultural heritage as it can be a guide for managing risks in preserving valuable digital resources. The result of this study can be a practical tool for managing risks not only for digital cultural heritage but also to all documents in digital format. It also provides an insight to other researchers to seriously investigate other risks of digital cultural resources besides the risks that have been identified in this study.

Keywords: digital resources, risk management, cultural heritage resources, Malaysia, digitization
Investigating the Quality and Effectiveness of the Picture Archiving Communication System (PACS) at an Academic Hospital in South Africa

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Abstract: PACS is a valuable workflow tool within a hospital environment and specifically in radiology departments. PACS is increasingly adopted in the developing countries like South Africa and India. While there has been much enthusiasm about the potential for PACS, major challenges persist in PACS implementation which calls for continuous evaluation of this system. However a review of previous PACS research indicates fragmented evaluation attempts and as such lack of comprehensive assessment of PACS systems. In addition, due to this fragmented work, the significance of factors influencing PACS quality has not been established. The present study investigated more comprehensively the quality of PACS in an academic hospital in South Africa and determined the extent to which the initial objectives for its development were met. A single case study involving 52 participants involved in PACS implementation and utilisation was conducted and mixed methods were used to collect and analyse the data. The findings suggest that many of the project objectives were achieved. In particular, PACS supports work processes within the Radiology department; Clinicians obtain images immediately and their interpretations of the results were perceived to be fairly accurate. However major challenges relating to security and compliance, maintainability, reliability of the data still exist and require urgent attention. This is also confirmed by the regression analysis which reveals that security and compliance are the most significant factors influencing the quality of PACS implementation in this academic hospital.

Keywords: picture archiving communication systems, academic hospital, evaluation, South Africa
Assessment of Knowledge Sharing Readiness: An Institute of Higher Learning Case Study

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Abstract: In 2002, the Knowledge-based Economy Master Plan was formulated to provide strategic direction for the nation to transform Malaysia from a Production-based economy to a knowledge-based economy. Institutes of Higher Learning (IHLs) play a major role in making the K-based economy achieving its targets. As an academic centre, IHL is a place where pools of knowledge-rich human resources are best acquired, codified and disseminated. This study is a survey on the sharing/transfer of knowledge activities in an institute of higher learning. To achieve an in-depth study, an institute of higher learning was chosen for a case study. The findings are based on replies to a questionnaire survey done from May 2010 to August 2010. The result from 206 respondents showed that the IHL is ready for knowledge sharing; and the knowledge sharing processes that comprise of knowledge capture, organize, refine and transfer activities do exist and have been practiced by the academician. This finding is significant to the university if it choose to embark on the knowledge management initiatives, such as implementing the Knowledge Portal (K-Portal).

Keywords: knowledge sharing readiness, knowledge sharing process, institute of higher learning

Ishikawa Diagram of Critical Factors for Information Technology Investment Success: A Conceptual Model

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Abstract: The reliance on information systems, Internet, and networking technology and infrastructure has made Information technology (IT) become the fundamental elements in many areas. That’s why organizations that pursue success are highly anticipated to invest tremendously in attaining flawless IT implementations. In ensuring the IT spending made a wise decision, necessary steps were taken to perform vital evaluations of the IT investments beforehand. Varieties of evaluations available, with different approaches adapted to different style of or-
ganizational preferences. Nonetheless, the essential part of it is the expectations of returns or values. Once the investment has been made, the achievement of the returns and values indicates the successfulness of the IT investment spending. But not all cases of IT investments end with success stories. Many have ended contrary to what organizations have expected. Lesson learned, studies have recommended to couple the evaluation aspects with enablers of IT investment success or success factors. This paper reviews the current literature regarding the IT investment evaluation approaches and proposes an Ishikawa diagram that describes the factors that influence the success of the IT investment. In this paper, six factors of IT investments enablers are discussed which are Financial, Internal, External, Strategic, Technological, and Risk.

Keywords: Information technology; investment; success factors; enablers; evaluation

Persona Ontology for User Centred Design Professionals

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Abstract: The design of software applications is a multistage creative process. User Centred Design (UCD) is a methodology used to develop applications that consider the goals of the users as a primary requirement. The use of personas, archetypical users, in UCD is well established in the software industry. Personas may take various forms: personas, mash-up personas, incomplete personas and unspoken personas. The use of personas increases as the design progresses through stages. Personas are used to facilitate the design of applications focusing on target users and to communicate with stakeholders. Users’ tasks of consuming the information from an application or web browser are cognitively demanding. It is expected that if the users’ profile matches the application’s personas, the users will find the application cognitively less demanding. Different techniques have been used to author personas with alternative media and varying information content, to such an extent that there is now a need to define the ontology of personas. This ontology would allow personas with consistent meanings to be shared across the design, development, test, marketing and sales teams; and would allow persona attributes and properties to be mapped to other design and development tools, such as actors, use cases and domain models. In this paper we explore the research question: how can we evaluate the usefulness of personas in software design, development, testing, communication and training? Through five case studies in various Australian industries, we provide insights into the use of personas in various phases of design, development, testing and training. We
present a conceptual design of persona ontology. We propose the design of a persona ontology framework which represents personas in a hierarchical, multi-dimensional structure. We present a Holistic Persona with five dimensions: Factual, Personality, Intelligent, Knowledge and Cognitive Process Dimensions. The Holistic Persona at the top level is an abstract persona with generic properties and attributes.

**Keywords:** holistic persona, scenarios, user centred design, usability, persona ontology

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**Evaluating Strategic Information Systems Planning (SISP) Performance Among Malaysian Government Agencies Using Organizational Learning-Based Model**

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**Abstract:** Previous strategic information systems planning (SISP) studies have highlighted that an ideal SISP practice should emphasise on organisational learning (OL) in their SISP approach. Surprisingly, studies focusing on the extent of OL and its contextual factors are lacking. This study aims to develop and validate a model for evaluating SISP performance in the Malaysian government agencies from OL perspective. For this purpose, an SISP performance model was developed based on the absorptive capacity theory where SISP is viewed as a learning process instead of planning process. The theoretical assumption is that the quality of SISP contextual factors will influence the extent of SISP learning which eventually will influence the SISP success. The contextual factors are SISP climate, consultant expertise and CIO capability. Meanwhile, the SISP learning factors comprise of shared ICT/business knowledge and SISP process effectiveness with SISP success as the SISP performance measurement. 706 questionnaires were sent to 234 selected government agencies in Malaysia. Only 27% of the government officers responded to the questionnaire meets the criteria of this study. Measurements were initially validated using SPSS. Subsequent confirmation on the measurements and structural validity were done by adopting the Structural Equation Modeling (SEM) analyses using AMOS. The results of this study demonstrated that the hypothesised SISP performance model adequately fits the sample data which assumed the model is acceptable. Generally, the findings of this study indicated that higher level of SISP climate, consultant expertise and CIO capability positively influence the extent of SISP learning factors and later influence the SISP success. In determining the SISP success, this study revealed that it is crucial for the Malay-
sian government agencies to identify appropriate SISP team members based on their knowledge, skill and attitude to promote conducive SISP learning climate for effective SISP decision making.

**Keywords:** SISP, government agencies, SISP performance, organizational learning, absorptive capacity model

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**Accessibility and Human Computing Interaction: Engaging and Motivating Students With Disabilities Through More Computer Empowerment**

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**Abstract:** While many instructors need to focus on the syllabus, subject content, administrative tasks, and students with varying learning styles, they may also need to address various learning style of students with disabilities. Many universities offer teacher training, but their training may not be detailed enough to help instructors be prepared to work with classroom accommodations for students with disabilities. In particular, online (virtual) instructors have another factor to work with in this situation, they have to work with students with disabilities virtually and offer similar or comparable accommodations. Many educational institutions are seeing that more students are enrolling in online programs and courses, and they realize that there may be some additional barriers to learning in terms of this learning environment’s technical process and structure. In particular, students with disabilities are enrolling even more with online courses with the hopes of a barrier-free environment. Thus, there are still some barriers still present in the learning environment in terms of technical/software application or interaction/communication problems. The purpose of this paper will be to look at how a university can address such problems and develop/create virtual solutions to these barriers by incorporating the help of others in the online community to brainstorm methods of inquiry and build virtual strategies. In particular, there needs to be a special emphasis given to online instructors to become better prepared and trained with technology in terms of structure and how to motivate all types of students, especially students with disabilities, to become more interactive online. Thus, there is a growing need for more human computer interaction, rather than just selecting and clicking single choices. Consequently, universities need to design and develop training programs to help educate and train current and potential instructors in the areas of disability awareness, virtual classroom accommodations for students with disabilities, as well as to create strategies for better learning opportunities for these students. The key focus with this training program would be to create better strategies to help increase better human computing opportunities for all types of students. While many instructors may not be
facilitating learning for this particular population at this time, the virtual learning environment is starting to attract more students with disabilities with a growing need to help them become more successful in their educational endeavors. Finally, this presentation will help to offer more insight as to the role and function of instructors in meeting the needs of students with disabilities.

Keywords: accessibility, disability, virtual learning, interaction, teacher training, human computing

Achieving Improved Usability Outcomes With Different Usability Practitioner Roles

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Abstract: This paper examines two sets of usability roles: the consultant vs the organisation based practitioner and the usability manager vs. the usability practitioner. This paper will review the current literature discussion of the usability practitioner’s role and present findings from interviews with industry practitioners. This research interviewed twenty one usability practitioners with five or more year’s industry experience. The interview transcripts were then analysed using the grounded theory methodology. The analysis provided various findings which highlighted concepts that impacted on the usability outcome of an IS project. The analysis produced twenty seven concepts which were formed into four themes, which included usability mindset, collaborative approach, usability practice and project constraints. This paper will focus on the noticeable differences between the various usability roles in relation to the resulting twenty seven concepts. The key findings show that usability managers look to strategic usability issues, by improving stakeholder collaboration and need to focusing on the skillsets of the usability practitioners. Consultants had a higher tendency to focus on usability activities compliance within a process, selecting and performing activities based on constraints (which include technological constraints, time and budget constraints), needed to have a degree of flexibility in their usability practice and often were used to validate usability practices in an organisation. Organisational practitioners were more focused on nurturing and educating usability understanding within the organisation and stakeholders involved in an IS project. A usability practitioner needs to be flexible enough to adapt to the situation they find themselves in when engaged in an IS project in order to maximise usability outcomes.

Keywords: usability, practitioner, role, industry, usability outcome
Information Availability as Driver of Information Security Investments: A Systematic Review Approach

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Abstract: Despite that information security issues have started to gain managers’ attention since computers were first put in use, information security management has not yet reached its maturity and is still requiring input from both the academia and industry. Indeed, today’s businesses have still not been widely convinced to invest in information security initiatives, resulting in the shrinking budget allocated for organisational information security. One common finding shows that organisational awareness towards information security can serve as a great driver that would help firms realise the business values of such investments. In addition, such emphasis on the awareness suggests the essential role of training, education and dissemination of quality information. As a result, one could argue that the available information has an indirect influence on the adoption rate of information security, through the impact of awareness. This research analyses the possibility of whether information availability could directly drive the intention to invest in information security initiatives by removing the uncertainty surrounding such investments. In other words, information availability per se could drive investing intention by reducing the obstacle – its uncertainty – rather than stimulate business needs through the enforcing of another factor that is awareness. Through intensive reviews on the literature, this paper synthesises and reports on the definition of information availability and how it could drive the intention to invest in information security. Specifically, the researchers examine the driving force of internal information (risk management, staff suggestions), external information (consultants, external audit) and general information (white papers, security reports). By exploring the direct relationship between information availability and intention to invest in information security, more practical recommendations and directions to promote organisational information security can be suggested. Before that, the researchers aim to update the readers with an understanding of the role of information availability in information security management.

Keywords: information security, investment, information sharing, systematic review, driver, information availability
A Revised User Interface Design for the Discovery Search Tool “Summon”: A Case Study and Recommendations

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Abstract: The research investigated the usability of the “Summon” discovery tool’ user interface among External and Internal students’ at Charles Darwin University (CDU). Summon is a “Discovery” search tool which supports users in their search for scholarly literature (library catalogs, journal articles, and books). The library at CDU was faced with the challenge of offering users with an easy experience with the tool as a result of increase users’ dissatisfaction. Issues and concerns were raised regarding the adequacy and the usability of the tool. The research is conducted in order to find out these issues and in order to provide users with a highly depend tool for finding academic sources. Two experiments based on interviews and questionnaires were conducted on external and internal students using diary studies, heuristic evaluation and usability testing in order to explore the users experience with the tool and in order to identify its usability problems. Data from external and internal users were collected as a set of measureable factors for user interactions. The data collected from the interviews and the questionnaires was analyzed and the poor usability aspects of the tool were identified as well as the reasons of the users’ dissatisfactions was identified. The research did not address error prevention and a lack of step-by-step instructions. The findings from the experiments together with a revised interface for the tool where highlighted and the administration of the CDU library were provided with the findings and the recommended changes to the tool. These recommendations were adopted by the CDU library. These recommendations included a revised user interface design for the Summon tool which highlights the necessary changes to be considered. These changes contribute to an easier, clear and user friendly experience which will enhance the user’s interaction and user experience.

Keywords: usability evaluation, heuristic evaluation, usability testing, summon tool, user interface design and usability

The Study of the Relationship Between Individual Factors and Usage of ICT in Tehran’s Public Libraries

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Abstract: In today’s networked society, many organizations rely on various Information and Communication Technology (ICT) applications in their day-to-day
business activities to effectively and efficiently deliver services to public. The aim of this study is to investigate the relationship between the human resources factors and ICTs usage to improve service delivery in Tehran’s public libraries. Using the survey data collected from 110 librarians, this study investigates the human factors such as: age, gender, the level of educational attainment, ICT skills and training, attitudes toward ICT usage, working experience, ICT access as well as the level of skill in English language among others. To test the level of ICT usage, a linear regression analysis was applied on panel data. The reliability of ANOVA regression was measured by Cronbach’s alpha coefficient. Other relevant factors such as the Pearson correlation coefficient and t-test statistics have been reported. The results of the regression analysis show an inverse relationship between age, work experience, and computer anxiety with the ICT usage. The results also show that there is a positive and statistically significant correlation between ICT usage and computer self-efficacy, the level of skill in English language, ICT access, attitude toward information technology, ICT training, as well as past experiences in working with ICT application. The results indicate that there is significant disparity among librarians in applying ICT in terms of education level. However, the findings show no significant disparity between males and females in the usage of ICT applications. The findings represent that while computer anxiety has strong impact on ICT usage, the age parameter, however, showed the lowest score in predicting ICT usage.

**Keywords:** ICT, individual factors, public libraries, librarians, Iran

**Identification, Evaluation and Ranking of the key Factors to Contribute to the Implementation of Electronic Municipality**

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**Abstract:** Electronic municipality, as a modern approach in international civil management, has a potential application in any town and it provides the citizens with its unique services in the areas of municipality responsibilities. In addition, these services could be 24-hour and without any place limitation. The aim of this research is identification, evaluation, and ranking of the key factors to contribute to the implementation of electronic municipality (a case study in Rasht municipality, Iran). According to the eminent models in acceptance technology, four influential independent factors including *tendency to use, ease of use, expected operation*, and *e-readiness*, called variables, have been extracted. All experts and
managers of Rasht municipality constitute the statistical population of this study. The means of research in this study is a random questionnaire based on a standard questionnaire from technology acceptance model. This questionnaire was presented to the participants after confirming its reliability and validity. The obtained results show that there is a significant linear relationship between every independent variable of the study and the implementation of electronic municipality (p<0.01). The greatest proportions of implementing electronic municipality in Rasht are devoted to the tendency to use and the ease of use, respectively. Furthermore, the variable of information technology management affects the relationships between independent variables and variables of implementing electronic municipality. Meanwhile, there is a significant difference between implementation of electronic municipality in good or bad situations of Information Technology management (p<0.05) which indicates that the variable of Information Technology management influences the effect of independent variables in this study. Finally, with respect to the effect of it on the implementation of electronic municipality, ranking of the key factors has been suggested to be as follows: the greatest effect belongs to the tendency to use, and the ease of use get the second rank.

**Keywords:** technology acceptance, tendency to use, ease of use, expected operational, e-readiness

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**E-Procurement in the Era of Cloud Computing**

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**Abstract:** This paper aims to present the Cloud-Marketplaces approach that delivers a new paradigm to e-marketplaces. The proposed Cloud-Marketplaces architecture is a combination of the Cloud Computing paradigm and Service-Oriented Architecture (SOA), and decouples the traditional e-marketplaces into E-marketplaces and Community Services Clouds. The new e-marketplace architecture is being experimented in a real business scenario, and the case study of Vortalway, an industrial-based research project conducted by a major international e-Marketplace, is presented. The paper concludes that despite the Cloud-Marketplaces paradigm is technically a sound concept, besides the engineering and technological issues, it poses interesting challenges regarding business models.

**Keywords:** e-marketplaces, cloud computing, SOA, cloud-marketplaces
A Comparative Study on Waseda e-Government Indicators Between Vietnam and Japan

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Abstract: E-Government is increasingly becoming an important concept in the application of Information and Communication Technologies (ICT) in administration and management of government. E-Government may be applied by the legislature, judiciary or administration, in order to improve internal efficiency, the delivery of public services, or processes of democratic governance. The use of ICT can deliver the services and information to citizens, effective interactions with business and industry, citizen empowerment through access to information, or more efficient and effective public sector management in most countries not only developed countries but also in developing countries. The Waseda world e-Government ranking has introduced since 2005 with the aim of evaluating, identifying, measuring and facilitating policies for the best practice of e-Government development, application of ICT in administration and leadership of 55 countries (2012). Based on this survey, this study introduced some critical remarks related to e-Government development in Vietnam and suggestions to develop e-Government in Vietnam. Through the ninth consecutive year of monitoring and surveying the development of e-Government with seven main indicators, thirty sub-indicators and 154 questions, the author found that the assessment of e-Government development in a country based on Waseda e-Government ranking main indicators is completely foundation and high reliability

Keyword: e-government, ranking, Waseda, indicators, Japan, Vietnam

The CIO in the Public Sector: The Role and Requisite Knowledge and Competencies

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Abstract: A considerable body of research exists on the role, and desired capabilities and competencies of the CIO. However, most of these studies have been executed in large, private sector organizations. It seems that the challenges faced by public sector CIOs are often very different to those in the private sector, and this might place different requirements on them in terms of knowledge and competence, as well as the roles they fulfil. To date, there has been little exploration into such requirements in public entities. To address this gap, exploratory re-
search was conducted into the role and competency expectations of CIOs in the public sector, and into the impact of the public sector context. A dyadic approach, involving both CIOs and their business colleagues, was adopted in order to gain more meaningful insights. Semi-structured interviews were conducted with both the CIO and the head of their main internal “business” partner of 17 local government organizations. The findings indicate that the CIOs and their business partners differ significantly in their views of required competencies. The business partners require a business knowledge and focus similar to theirs, and most manifest scant regard for the technical expertise necessary or the technical requirements of the organization. IT is there to support them. The government environment often places more onerous constraints on CIOs than in the private sector, especially so in terms of reporting level; the ability to influence strategy; decision making flexibility; and resourcing. The findings from this research extend the application of the RBV and also provide greater understanding of the competencies and roles of the CIO. It also provides insights for recruiters of public service IT professionals and CIOs, human resources managers, as well as for providers of training programmes.

**Keywords:** CIO, competency, knowledge, skills, roles, public sector

**Trusting Your Bank in a Digitally Connected World – a New Zealand Investigation Into Customers Perceptions of Ethical Business Practice**

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**Abstract:** As the use of online social networks (OSNs) grows, people place more of their personal information online, and others find different ways of exploiting it. While there is a lack of awareness around the privacy implications of these actions, there remains an expectation of privacy with regards to OSN data that may not entirely be justified. In a heightened competitive environment, banks are using data from OSNs for lending decisions. They expect to reduce their risk significantly on lending decisions through accessing the personal information on clients OSN accounts. Customers in New Zealand may perceive such use of OSN data by New Zealand banks to be a privacy violation, as their OSN data would be used for purposes other than those for which it was provided. As a result customer demand for ethical and compassionate use of their data is growing. Customers expect greater corporate social responsibility, especially from banks after the recent global financial crisis. This research explores whether customers would perceive the use of their OSN data to be a violation of their privacy. It is intended to be a way of evaluating whether banks’ use of data found about customers on public
OSNs to improve their lending decisions would be perceived by customers as a violation of their privacy. Through a critical review of the literature on social exchange theory and communication privacy management theory, followed by a discussion of the research methodology used, this research employed an anonymous online survey and a series of semi-structured interviews to develop conclusions about whether a perceived privacy violation could occur from the use of customers’ data on OSNs. The research found that respondents who were less informed about OSN privacy policies, had a greater expectation of privacy, even though they had not actually read the privacy policies of the OSN sites. This may contribute to an over-expectation of privacy on OSNs and a high likelihood that a perceived privacy violation would take place should the New Zealand banks decide to emulate banks in the USA and use OSN data to influence lending decisions. This study has thus highlighted the need for greater care and transparency, as well as careful management of customers’ expectations and trust if New Zealand banks wish to pursue this method of influencing lending decisions. The study revealed a high likelihood that should New Zealand banks decide to follow banks in the USA and use OSN data to influence lending decisions, their customers would perceive such behaviour as unethical and an invasion of privacy. In terms of privacy on OSNs, the research highlighted a greater need for users to read and understand the implications of both the privacy policies and the privacy settings of their accounts in order for them to ensure that the information that they wish to keep private does, indeed, remain so.

**Keywords:** banks, privacy invasions, social networks

**Changes in use, Perception and Attitude of First Year Students Towards Facebook and Twitter**

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**Abstract:** As social computing systems persist over time, many elements such as user experience, perceptions, attitudes and interactions may change. Facebook and Twitter are two social computing systems that have become increasingly popular among university students. This research replicates studies by Lampe, Ellison and Steinfield (2008), and Johnston, Tanner, Lalla and Kawalski (2011) to assess how Facebook and Twitter use, perception and attitude have changed among first year students at the University of Cape Town (UCT) in South Africa. Because online social networks, social networking sites and micro-blogging sites are relatively young as an area of academic research, there is limited research into the impacts of these social networking and micro-blogging sites, particularly on South African university students. A sample of 486 students completed the sur-
vey. Compared to research data from previous studies by Lampe et al. (2008) and Johnston et al. (2011), this study found that the percentage of students using Facebook increased to 95%, Facebook daily usage and the number of Facebook friends had doubled. This study also found that UCT first year students are more dependent on using Facebook, in comparison to using Twitter; that their perception of Facebook privacy has led to a decrease in personal information shared on Facebook as well as a change in audience perception. The data also shows that UCT first year students perceive friends and total strangers to be their main audiences on Twitter; the attitude of UCT students towards Facebook remained positive, on the other hand, a less positive attitude was experienced from the students using Twitter; and Facebook is a more popular method for communication between students. All findings are within the South African context. One can see there have been changes in usage, attitude and perception of Facebook over time.

**Keywords:** Facebook, Twitter, use, perception, attitude, students

**Analysis of Dissatisfiers That Inhibit Cloud Computing Adoption Across Multiple Customer Segments**

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**Abstract:** Cloud computing in many ways can be viewed as both a technology offering and a business alternative. But its adoption today is driven more by economic rationale than by technology justifications. Though in delivery terms, cloud offering is a merger of state-of-the-art concepts like virtualization, server consolidation, interoperability and dynamic CPU provisioning, its risk-benefit analysis is purely driven by business imperatives. As a technology, Cloud Computing topped the Gartner’s Hype Cycle only as late as 2009. However since then the hype has settled down and ‘computing in the ethereal cloud’ is slowly emerging as a strong cost-effective alternative to traditional computing. This paper focuses on the customer side perceptions of cloud adoption with a purely India-centric perspective. Since cloud is a fairly new offering, there is bound to be a lot of inertia in its acceptance. This is because cloud offerings - from the product development lifecycle (PDLC) point of view - are at a nascent stage and hence perceived risks outweigh perceived gains. This paper focusses on the cloud adoption risks across four sectors – SME, BFS, Education and Hospitals. The four key risk categories identified in the context of cloud adoption are vendor related risk, security related risk, no-gain risk and efficiency related risk. The paper does a relative mapping of these four risks for each of the four mentioned industry clusters. Since cloud technology is only in the process of getting established and main stream adoption is still a few
years away, many of the cloud adoption fears are nebulous and will be removed once critical volumes start building up. Till such a maturation happens, cloud vendors will have to assiduously work out ways and means of assuaging the fears that inhibit adoption – real or perceptional. This paper is posited to be a pointer in that direction.

**Keywords:** cloud computing, dissatisfiers, segmented risk profiling, risk perception management, conjoint regression

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**Explaining the Adoption of Complex Innovations by Reflexive Agents — A Critical Realist Perspective**

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**Abstract:** The adoption of innovation is a multifaceted and dynamic phenomenon. It occurs as a result of the interplay between structural influences and agents’ activities. Although existing studies on innovation have recognised the importance of theories that link the structure, the macro level, and agency, the micro level, in explaining changes over time, few theoretical accounts support the integrations of multiple levels of analysis. The purpose of this paper is to develop an explanatory framework based on a realist social theory and underpinned by a critical realist perspective, with the intention of addressing the difficulties that arise from efforts to integrate the macro-micro levels of analysis. The potential of the framework is empirically illustrated with a case study that examines the adoption of one Enterprise Systems Implementation Methodology. Our qualitative study provides explanatory insights and a rich description of a particular type of complex innovation. Four theoretically and empirically grounded methods of adopting an implementation methodology are identified: selective, aggregated, integrated and infrastructural. The variations in the adoption suggest an evolutionary change in this particular case. Using the framework allow us to achieve four things. First, the framework will support the researchers in identifying particular innovation configurations. Second, it will take into account the embeddedness of innovations that have occurred within broader structural configurations. Third, it will allow the researchers to distinguish the different stances agents might adopt toward particular innovations and structural configurations. Fourth, the researchers will be able to identify variations that have occurred in the adoption of innovations. This study offers a foundation for future work that may contribute to a more coherent view on complex innovations and insights into their potential adoption; as such, the findings presented here can provide guidance for practitioners who seek to adopt complex IS/IT innovations.

**Keywords:** IS/IT adoption, enterprise systems implementation methodology, realist social theory, critical realism
Adoption of Mobile Technology to Enhance Services at Academic Library

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Abstract: Many universities are struggling to respond to the needs of their users. This could be attributed to the rapid change in technological innovations. The growing interest on mobile technology in organisations is at a fast pace, particularly in institutions of higher learning. Mobile technology could be used in academic libraries to provide a better service to their clients or improve the service that they currently provide. Case study research was conducted at Capital University to understand the factors that could influence and impact the adoption of mobile technology in academic library services.

Keywords: academic library, services, mobile technology, mobile devices, technology acceptance model

A Theoretical Review of the Impact of Test Automation on Test Effectiveness

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Abstract: In a recent paper by Whyte and Mulder (2011) on factors impacting on Software Test Effectiveness, Test Automation as a test tool was shown not to have a significant impact on overall test effectiveness, a result which seems to contradict the collective wisdom of the IT software testing industry. Therefore, this paper presents a review of literature and attempts to discover within the existing body of knowledge what academic and practitioner actual experience is regarding test automation. This literature review will form the basis of a thorough examination of the impact of test automation on software test effectiveness. Automated testing is seen as a high-risk activity used to reduce the cost of testing and to realise other benefits such as reduced test execution time, greater test coverage, and improved quality of testing. Ultimately, these benefits lead to increased competitive advantage through greater product quality and reliability and quicker time to market thus resulting in increased customer satisfaction. Increasingly, it has become common to read about failed attempts at automated testing. There are many reasons for this such as under estimation of effort, complexi-
ty and automated test suite maintenance. Increasingly, greater resources are being focused on automated test suite maintenance rather than actual software testing. This research attempts to identify factors that both negatively and positively influence upon automated testing. It also investigates the factors that influence automated test suite maintenance, which is seen as a critical challenge that needs to be met in order to achieve successful test automation. Ultimately, this research seeks to identify techniques and methods that could potentially mitigate the risks associated with automated testing.

**Keywords:** software test automation, automated testing, cost-benefit model, testware maintenance, testability, test design, test objects, test automation complexity

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**Abstract:** Cloud computing as an emerging high technology has been recognised by organisations and individuals for a wide range of potential applications. Since the concept’s first appearance in 2007, the authors found a dominant amount of studies in the non-technological domains, including attempts to define and categorise cloud computing and the challenges and issues of the technology’s adoption. Nonetheless, few researches are dedicated to determine the drivers of adopting cloud computing thus the literature is limited on this topic. As more adopters are becoming familiar with the technology and implementing cloud computing in their daily work, understanding what drives their adoption decision is essential to create opportunities for future cloud technologies to be tailored and aligned with the consumer’s needs thus promotes exploitations of the technology’s promising applications. This research takes a quantitative approach by developing and validating a theory-based conceptual model. Among the theories that are commonly applied in Information Systems research, the authors found Technology-Organisation-Environment framework can encapsulate the adoption’s factors into one big picture. The authors conducted a secondary data analysis on the recent large-scale survey of IBM to investigate the drivers and barriers of cloud computing adoption. Structural Equation Modelling and Partial Least Square statistical methodologies provide rigid scientific procedures to validate the conceptual model. This study contributes a statistically validated conceptual model of the drivers and barriers of cloud computing adoption. In addition, the research provides a comparison between two different discussions (i.e., industry report and academic research) on the same topic and data. The findings benefits are
twofold. First, it seeks to clarify the profound knowledge on the factors surrounding cloud adoption to better understanding cloud computing. Second, it also provides directions for future research by suggesting validations on the proposed model while discussing the limitations of analysing commercial survey.

**Keywords:** cloud computing, adoption, drivers, barriers, structural equation modelling, Technology-Organisation-Environment-Framework

**IT and Business Value—a Missing gap: A SME Case Study**

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**Abstract:** There have been conflicting views on how IT system can deliver sustainable business value. IT in this context refers to structured information management and workflow management. IT has been considered as main tools to improve operational efficiencies in term of cost savings and improved productivity. With the advent of the strategic use of IT in business where IT is expected to contribute to sustainable strategic business value, several approaches can be employed by organisations to realize the business value. Resource Based View (RBV) has been widely used as a framework to guide businesses in their quest for achieving business competitive business value from IT system. Melville et al developed a framework based on RBV theory to identify factors influencing the generation of strategic value from IT system which comprised of three domains: focal firm, competitive environment and macro environment. Focal firms should have IT resources, complementary organizational resources with improved business processes to achieve organizational performance. Two external factors including competitive environment composed of industry characteristics and trading partner resources that firms were operating in and macro factor of country characteristics would shape the IT application and IT business value generation. This study aims to explore the impact of factors identified in Melville’s framework during the implementation of an Enterprise Resource Planning (ERP) system in a Small and Medium Enterprise (SME) – a textile manufacturing firm in Vietnam. The study finds that some factors have clear impact while others especially from macro domain do not have clear impact in the way the potential value generation from the ERP system is planned. The role of IT resources has been considered lightly by the firm, whereas stability of human resources, well defined business process and structure have been viewed greatly more important for the effective use of the ERP system. The model is found to help increase the firm’s awareness of factors that may influence the effective investment of IT. Further research can be done to establish a clearer process to evaluate the transition from one domain to another.
which is proved difficult to apply in this case. Also a comparative study between industries might explore differences in the key factors in different industries.

**Keywords:** IT business value, sustainable organizational performance, small and medium enterprise (SME), resource based view (RBV)

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**Usability Testing for an Evaluation of Application-Learning Tutorials and Document-Based Instructor**

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**Abstract:** In recent years, the demand for the development of three-Dimensional (3D) animation projects and augmented reality (AR) applications have quickly grown. Programmers who are both able to code and possess the ability for creating 3D artworks are rarely found. It has been suggested that some of the major factors that contribute to this include the need for additional graphical skills and thoughts. In addition, many of 3D software are challenging for the programmers to control the 3D views by different mouse movements in the specific buttons. There are numerous of particular technical terms and complicate menus. That is not easy to understand how to use those multimedia applications for new users in a short period of time. Development of an effective learning system for 3D software needs to be evaluated. The suitable learning tutorial system was expected to help the users by self-learning for easily using 3D software. This study evaluated the usability of an application multimedia tutorial compare with an instructor manual document. The graphical application that was tested in the study was ‘Autodesk Maya 2011’, 3D animation software for creating visual effects, game development, and 3D animation projects. This research involves heuristic evaluation and observation to the non-experience Maya-users when creating simple 3D object. Comparing between a group that use the multimedia learning movies of Maya, and another group uses the instructor manual to guide ‘How’ to create the same 3D object. The evaluation components that were evaluated are the rate of errors, completed time, speed of user self-learning, and learning ability. The results showed that the instructor documents were able to increase a speed of learning and reduce errors. However, the learning movies were more applicable for the further tasks. The usability test also showed that the step-by-step document is practical for learning 3D software in both novice users and computer-skilled users.

**Keywords:** learning system, self-learning, application tutorial, usability test, and evaluation

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Using PRS to Enhance Student Learning Process: The Application of Revised Study Process Questionnaire-2 Factors

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Abstract: Based on Biggs et.al (2001), this study investigated the extent of how Personal Response Systems (PRS) can influence students’ learning experiences in an undergraduate classroom for deep and surface learning. The experiment involved 40 students in Bachelor of Design (Multimedia Systems) at RMIT University Vietnam. The topic presented was Colour Theory. 99% of the participants were local students who used English as second language. The Study Process Questionnaire circulated during PRS sessions were used to inquire into student motives and strategies in achieving their learning outcomes. Factor analysis identified 4 underlying factors: Deep Motive, Surface Motive, Deep Strategy and Surface Strategy. The quantitative analysis suggested that there was a positive relationship between Deep Approach (DA) and Surface Approach (SA) with the four sub-scales, Deep Motive (DM), Deep Strategy (DS), Surface Motive (SM), and Surface Strategy (SS). In other words, PRS appears to enhance, improve and facilitate students’ learning process by promoting deep motives and strategies. This finding was further validated with data gathered from focus group interviews. 10 participants had been invited to participate in focus group interviews. The prompts of the semi-structured interview include PRS classroom experience, motives of using PRS and the strategies of using PRS in classroom. Special attention had been given attention to the analysis of the student’s role, lecturer’s role and the interaction between them. The findings from the interviews supported the quantitative analysis and suggested that the traditionally perceived teacher roles, learner roles and the interactions between teachers and learners in the classroom had been transformed tremendously when PRS was used as a teaching pedagogy. In details it suggested that PRS has assisted students in increasing their concentration, participation and contribution in classroom discussion. It also shows that lecturers change their roles from knowledge delivery to classroom discussion facilitators. Further pedagogy implications are also discussed.

Keywords: clicker, learning process, learning outcome, active learning
Learning From a Failed ERP implementation: The Case of a Large South African Organization

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Abstract: Enterprise Resource Planning (ERP) systems allow enterprises to integrate various processes across different functional areas in an attempt to increase productivity, efficiency and to sustain their competitive edge. However, despite the various positive outcomes of adopting ERP systems, the implementation process poses a number of challenges for organizations. This research reports on the case of a failed ERP implementation in a large South African organization and looks into the details that led to the failure. Consequently, through the lessons learnt, this paper also reports on the different dimensions of Knowledge Management (KM) required during the ERP implementation using Chan’s (1999) framework. Through use of semi-structured interviews and qualitative data analysis, this study validated Chan’s (1999) model in a large emerging economy. Some of the challenges the organization faced include lack of technical, process and project knowledge. Other concerns include poor understanding of the need for change, lack of management support and poor change management and training initiatives. Managing ERP systems knowledge has been identified as a critical success factor. However, a review of the existing literature reveals a lack of comprehensive research on the role of KM during ERP implementation. While ERP implementation within large organizations has been well researched, there have been relatively fewer studies focusing on the role of KM in emerging economies. The study seeks to close some of the identified gaps in this area, hence contributing to the existing body of knowledge. Through a practical lens, this research should be of immediate benefit to large organizations in the South African economy.

Keywords: failed ERP implementation, user experiences, knowledge management challenges and dimensions, large organization, emerging economy

Using YouTube to Support Student Engagement for the Net Generation in Higher Education

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Abstract: Using engaging and entertaining teaching tools inside the classroom has become imperative in order to ensure, amongst others, engagement for the scholars of today. These scholars are familiar with a vast array of digital technologies
and are able to engage with multiple sources of information at the same time. Traditional teaching methods are not enough to keep these scholars engaged and as such, traditional teaching methods must be supplemented by engaging learning methodologies and interactive learning tools. Many of these learning tools have their origins in Web 2.0 and have enjoyed wide-spread adoption in the education arena because of their potential as contemporary education technologies. These technologies are not restricted to enriching course content alone and can also stimulate and encourage engagement of students in the classroom. For this research project, the use of YouTube © is described to encourage student engagement and how this innovative teaching tool can enhance students’ engagement with the subject-matter. The research findings will be supported with outcomes from student questionnaires. The main inspiration for this paper is the research and analysis of an innovative method of teaching, being the use of YouTube for student engagement in the classroom, which has been applied for the first time Department of Information Systems at the University of Cape Town for the INF 2004F course. This will have practical implications for higher education institutions on a global scale as it will assist in the decision making process as to whether to adopt YouTube.

Keywords: student engagement, social computing, net generation, technology enhanced learning, YouTube©

Knowledge Creation in Students’ Software Development Teams

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Abstract: Knowledge creation is a process whereby individuals, groups and organizations engage in activities that generate new ideas. Knowledge creation can be a process or an output/outcome. It is the subject of study in many fields; in computing, these studies tend to focus more on knowledge creation as a process and less on knowledge creation as an output/outcome. These studies also focus mainly on knowledge creation in business organizations and ignore public institutions such as higher education institutions. They also focus on professional teams and ignore novice developers such as students. The study addressed these shortcomings by investigating knowledge creation in students’ software teams. An ethnographic study was conducted on six Management Information Systems (MIS) students’ software development teams who were conducting a systems development term project at a University. Data were collected over a period of three month through participant observation, interviews and open ended questionnaires. The study answered the following questions: what knowledge creation
activities take place in students’ teams? What channels of communication facilitate knowledge creation in student’s teams? What information sources do students use to create knowledge? And what challenges teams face when they create knowledge? The results reveal knowledge creation activities such as problem definition, brainstorming, programming and documentation. Furthermore, students use the Internet, books, class notes, class presentations, senior students and professional software developers as sources of knowledge. Mobile devices such as mobile phones and Blackberry devices facilitate knowledge creation. Challenges or barriers to knowledge creation in students’ teams were also discovered. They are: lack of material and financial resources, lack of technical skills, lack of time, students staying off-campus, and ambivalent team members who do not do work. The conclusion drawn from this study is that students’ teams are capable of creating knowledge (a working system) just like professional teams.

**Keywords:** knowledge creation, software development, computing, ethnography, students’ teams

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**Defining Social Technologies**

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**Abstract:** The popularity of social technologies continues to grow in the society. The term ‘social technology’ is often referred to digital social networks such as Facebook, Twitter, LinkedIn, etc. In order to this a redefinition of this concept based on the original definition is needed. Nowadays the concept of social technologies has several aspects which destabilize the dominant status of technology. It emphasizes social sciences and the humanities as society shapers, reconsiders the strength of social dimension in technological sciences. The aim of this paper is to provide insight into the concept of social technologies, to develop its meaning in information and knowledge society by analyzing new needs and application forms. **Design/methodology/approach –** The research results have contributed to the knowledge of the concept of social technologies. Based on the analysis of scientific literature and results of empirical research in the Focus group as well as Content analysis, theoretical framework for defining the concept of social technologies was developed. **Research limitations/implications –** The research is limited in a few aspects. To understand the concept of social technologies more deeply and to develop technological perspectives in social sciences a broader theoretical and empirical research is necessary. In order to generalise the research findings, it is recommended that further research includes different dimensions from the perspective of other fields of science.

**Keywords:** social technologies, social engineering, social media, millennial generation
Community ICT Hubs Sustainability: Result From a Field Study of ICT4D Project

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Abstract: Technically, a project ends when the project closure and product handover are undertaken. However, the results of the project, specifically the product that the project has borne, will take on a new life in the user environment. The processes undertaken to ensure the usability and effectiveness of the product in that context will determine the product’s future life or its sustainability. The purpose of this paper is to identify and understand the sustainability criteria of community ICT hubs implemented at 9 districts in one of the most developed state in Malaysia. This study uses case study as a strategy to collect its qualitative data using document review, observation and interview of 92 respondents. There are 8 sustainability criteria discovered, grouped within 3 sustainability dimensions: social / cultural; economical; and institutional.

Keywords: community ICT hub, ICT sustainability, ICT4D, sustainability dimension, sustainability criteria

Sources of Disturbances Experienced During a Scrum Sprint

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Abstract: Scrum, as a form of agile project management methodology, comes with many benefits derived from the iterative form of development processes. Various organisations within South Africa have implemented Scrum within their development teams and are fast receiving the positive benefits from it. While Scrum, in many aspects of the methodology, is highly effective and successful within different organisations, there are always going to be pitfalls and negative attributes associated with adapting a new methodology. The purpose of this research is to determine the different sources of disturbances in the middle of a sprint while using Scrum. Case studies were conducted which included 3 companies in Johannesburg and Cape Town that have implemented Scrum: 12 face to face, one-on-one interviews with participating Scrum team members; 1 group discussion with 8 participating Scrum team members; and 8 questionnaires After analysis, 6 primary themes emerged as the leading sources of disturbance in the
middle of a sprint: the Client, Management, External Influences, Processes, Communication, and Experience. This study opens up various doors of possible research including research on possible ways to prevent the sources from having negative effects on the Scrum team and the project; the effect that these disturbances have on the relevant stakeholders involved; and ways in which these sources could be incorporated into the Scrum processes in order to decrease the negative impact. The results of the study thus provide managers with the opportunity to take a deeper look into the sources of their Scrum problems and provide them with an understanding as to how they may prevent these disturbances from causing long term, negative effects on the project and the team.

**Keywords:** scrum, sprint, sources of disturbances, agile software development

**How Reflective Professionals Design and Evaluate Financial Information Management Systems Courses**

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**Abstract:** Financial Information Management Systems (FIMS) or Accounting Information Systems (AIS) is a cross-discipline subject, often taught by Computing and Accounting disciplines. In recent years, demand for this subject has grown. However, educators have lamented high failure rates among accounting information systems students; professional bodies have reported that graduates lack sufficient meta-cognitive knowledge of information systems to perform their tasks. Quality teaching of FIMS or AIS requires instructors to actively update their knowledge of accounting systems and information technology as well as to reflect on teaching techniques. Reflection and reflective practices are taught within the education discipline, and have grown in popularity among many other disciplines. Yet little has been written about how accounting and IT professionals reflect on their practice and how they apply their reflections to their teaching. This paper explores the research question: how can reflective professionals assist computing and accounting academics in the design and delivery of the FIMS or AIS courses? Through our case study at an Australian university, we provide insights into the application of constructivist theory and reflective practice strategies in teaching FIMS courses. We discuss (1) the rationale for the importance of constructivist theory, cognitive load theory, reflective and action-research in teaching and learning, (2) Bloom’s Revised Taxonomy, (3) the applications of Bloom and the reflective concept to design and deliver FIMS courses, (4) reflection on our teaching strategies in applying these concepts and, (5) conclusions on how reflective professionals can assist computing and accounting academics in the design and deli-
very of FIMS or AIS courses. Our study supports the view that reflection is a strat-
egy; the Bloom’s Revised Taxonomy and the PEER Model are tools to assist in-
structors in designing and delivering courses that enhance participant’s learning
abilities. We propose the five dimensional reflective cycle to facilitate reflective
practice among academic and professional instructors for designing and delivering
FIMS and AIS courses.

**Keywords**: active learning, reflective practice strategies, action-research, evalu-
ation, financial information management systems (FIMS), accounting information
systems (AIS)

**Implementation of a Corporate Performance Management System in a Large City**

**Mark Tudor and Mike Hart**
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**Abstract**: This study examines the implementation of a Corporate Performance
Management (CPM) Information System in the context of a large South African
city. The role of Information and Communication Technology (ICT) in supporting
and facilitating CPM (also known as Business Performance Management) is also
examined. CPM has evolved greatly since the early static Executive Information
Systems of the late 1980’s, now usually building on the Balanced Scorecard and
Strategy Map concepts of Kaplan and Norton. To be effective, CPM systems re-
quire sound Business Intelligence capabilities and integration of many technologi-
cal aspects, apart from many organizational considerations such as top manage-
ment support, organizational culture and change management. Starting at a high
strategic level, CPM systems ripple down to lower levels of the organization, in-
corporating key performance indicators (KPIs) and performance metrics, business
processes, dashboards and scorecards. Given recent events in the financial sector,
many CPM systems now incorporate additional elements concerning Corporate
Governance and related legislation. For this research, key role players from the
city and consultants involved in the implementation of enterprise resource plan-
ing (ERP) systems were interviewed, and documentation and the CPM system
examined. Analysis used an interpretive Actor-Network Theory (ANT) framework.
Findings show that: 1) ICT can play a strong role in enabling an effective CPM sys-
tem, but when it does not deliver as expected, this may have negative conse-
quences. 2) Adoption of the business processes associated with CPM is closely
linked to adoption of the CPM ICT, but the performance culture of an organisation
can block the adoption of both. 3) ANT proved to be a useful way of analysing the
overall implementation process. While findings were for a specific city, it is argued
that knowledge of many of the issues that arose in this implementation could be
of value to others embarking on introduction of CPM systems in either the public or private sector.

**Keywords:** performance management, implementation, public sector, CPM system, KPI

**Digital Archiving and e-Discovery: Delivering Evidence in an age of Overload**

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**Abstract:** Within e-Government, trust in electronic stored information (ESI) is a necessity, not only when communicating with citizens, but also for organizational transparency and accountability. In the last decades, most organizations underwent substantial reorganization. The integration of structured data in relational databases has improved documentation of business transactions and increased data quality. That integration has improved accountability as well. Almost 90% of the information that organizations manage is unstructured (e.g., e-mail, documents, multimedia files, etc.). Those files cannot be integrated into a traditional database in an easy way. Like structured data, unstructured ESI in organizations can be denoted as records, when it is meant to be (and used as) evidence for organizational policies, decisions, products, actions and transactions. Stakeholders in e-Government, like citizens, governments and courts, are making increasing demands for the trustworthiness of this ESI for privacy, evidential and transparency reasons. A theoretical analysis of literature of information, organization and archival science illustrates that for delivering evidence, reconstruction of the past is essential, even in this age of information overload. We want to analyse how Digital Archiving and e-Discovery contribute to the realization of trusted ESI, to the reconstruction of the past and to delivering evidence. **Digital Archiving** ensures (by implementing and managing the ‘information value chain’) that: [1] ESI can be trusted, that it meets the necessary three dimensions of information: quality, context and relevance, and that [2] trusted ESI meets the remaining fourth dimension of information: survival, so that it is preserved for as long as is necessary (even indefinitely) to comply to privacy, accountability and transparency regulations. *E-Discovery* is any process (or series of processes) in which (trusted) ESI is sought, located, secured and searched with the intent of using it as evidence in a civil or criminal legal case. A difference between the two mechanisms is that Digital Archiving is implemented *ex ante* and e-Discovery *ex post* legal proceedings. The combination of both mechanisms ensures that organizations have a documented understanding of [1] the processing of policies, decisions, products, actions and transactions within (inter-) organizational processes; [2] the way or-
ganizations account for those policies, decisions, products, actions and transactions within their business processes; and [3] the reconstruction of policies, decisions, products, actions and transactions from business processes over time. This understanding is extremely important for the realization of e-Government, for which reconstruction of the past is an essential functionality. Both mechanisms are illustrated with references to practical examples.

Keywords: e-government, accountability, evidence, digital archiving, e-discovery

Customer Centricity: A Comparison of Organisational Systems With Social Media Applications

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Abstract: Purpose - A survey of the computing press over the last 30-40 years would provide evidence that organisational in-house IS departments regularly fail to deliver information systems on time, to budget or most importantly of all, to specifications demanded of their users. Yet since the popularisation of social networking software application usage has become a normal daily activity for the majority of the people on the planet. Facebook to name just one application has recently reported having over 1 billion users (1/6th of the planet’s population!). So this research investigates why organisational applications lag behind in providing users with customer centric solutions when compared with social networking applications. Design/Methodology/Approach - A review of the recent literature on the success of systems development projects were used to compile a 28 item survey instrument, which was grouped into 5 themes, this instrument was sent out to 101 respondents in 5 companies in Cape Town. Findings - The results of the survey were unexpected in that overall the majority of participants actually ‘liked’ their organisational applications. The research also found varied results when the data was segmented by age groups with the ‘older’ population of the research sample was scoring organisational software higher social media applications. Research limitations/implications - The scope of this research did not include further research into the possibility that either the older population ‘liked’ the social networking applications less, and therefore scored organisational software comparatively higher. Practical implications - The knowledge that the organisation applications are actually more customer centric than is commonly acknowledge suggests that organisational IT departments are on the right track when it comes to delivering the expected results. Originality/value - Much of the recent literature available do suggest that organisational IS departments are improving their delivery quality and raising client satisfaction, but there was no indication in any of
the literature reviewed, that the organisational software had overtaken the social networking applications in providing satisfactory solutions for segments of their customers.

**Keywords:** customer centricity, software development, social networking, organisational applications

**Using the Inkwenkwesi Model to Identify the Knowledge Requirements of a new Project Entrant**

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**Abstract:** IT projects fail for many reasons. Knowledge is a critical resource within organizations and projects but is often overlooked as a cause of project failure. Changes to project teams can affect the knowledge balance within the team and new entrants often have to learn large amounts of information before actively contributing to the project. The Inkwenkwesi model identifies eight domains of knowledge; People, Process, Organization, Product, Service, Suppliers, Customers and the External Environment. This research aims to identify the knowledge requirements of a new project entrant to become productive sooner, and test the Inkwenkwesi Model as a tool for assisting new project entrants acquire the knowledge required to become productive sooner.

**Keywords:** Inkwenkwesi Model, project knowledge, project requirements, project entrant

**An Investigation into the Effectiveness of Storytelling as Means of Sharing Tacit Knowledge**

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**Abstract:** Purpose – The aim of the study is to investigate the effectiveness of storytelling as means of sharing tacit knowledge at Eskom Distribution in the Western Region. There is much concern among many South African organizations, that the imminent retirement of many senior executives and subject matter experts is going to leave a vast tacit knowledge gap and loss of organizational memory which may takes years to recover, if possible at all. There has been much interest in storytelling as a means of capturing this knowledge, but to date there has been no research within the Knowledge or Information Management disciples looking at the efficacy of storytelling as a means of capturing tacit knowledge. **Design/methodology/approach** – In total, eight stories were collected from four regional executives (storytellers) and were analysed using an interpretive approach
from six randomly selected knowledge workers (storytakers). Finding – The findings of this study clearly demonstrated that valuable tacit knowledge can be captured through storytelling. In addition the results suggest that the storytelling form allows for a rich application of the story beyond the original intent of the storyteller. The research confirmed that tacit knowledge sharing can add considerable value to the organisation’s competitive environment. The researcher recommended factors to consider when implementing the use of stories and storytelling as a tacit knowledge capturing method including a solid process for encouraging knowledge workers with long service to share their experiences. Research limitations/implications – The generalizability of the research is limited by the fact that data was collected from only one organization. Despite the limitation this research presents empirical evidence in support of the effectiveness of storytelling as a means of capturing tacit knowledge and thereby provides a solid base upon which further research can be built. Originality/value – This paper investigates the effectiveness of storytelling as a tool for sharing tacit knowledge the efficacy of which, to the author’s knowledge, has never been substantiated. This research paper presents evidence in this regard.

Keywords: Stories, Storytelling, Storyteller, Storytaker, Tacit knowledge, Knowledge Sharing

The Role of IS in Residential Energy Management

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Abstract: While the increase in worldwide residential energy consumption is a concern, a larger concern is the breakdown of residential energy use which is shifting towards life-style oriented appliances and devices. Life-style appliances and devices drive the biggest growth in residential energy consumption making them a concern requiring intervention, given also that life-styles are behavioural in nature with potential for modification. Previous research involving use of IS in residential energy management has not benefited from new technologies, in particular new information technologies (IT). Thereby, the full potential of information systems (IS) is still not harnessed for residential energy management warranting research into its roles in order to guide design and deployment of IS for improved residential energy consumption. The objective of this research is to study the roles of IS in residential energy management. By providing a clear role of IS in residential energy management, we set the grounds for further research into a framework for the design and deployment of a residential energy management IS in order to improve on residential energy efficiency. The paper commences with a review of the factors contributing to residential energy consump-
tion and also use of IS in residential energy management. The roles of IS in residential energy management are then derived from the functional affordance based on studies into the four areas of residential energy management process, technologies used in residential energy management, actual implementation of IS for residential energy management and environmental behavioural theories and models. From the research it is found that IS for residential energy management fulfils the overarching IS roles of automating, informing and transforming processes. Of these, a specific key role found is in the channelling of interventions to the residential energy end user in order to modify behaviour towards improved energy efficiency.

**Keywords:** residential energy, energy informatics, environmental behaviour, energy behaviour, green IS, green IT

**Does the Need to Belong Drive Risky Online Behavior?**

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**Abstract:** One of the most fundamental characteristics of the human condition is the need for social belonging. Social group formation is fundamental to our evolutionary survival. Online communities on social networking sites, reflect the real world human need for socialization and acceptance, and use mediated communication mechanisms to facilitate those relationships. They also reflect the behavioural mechanisms humans use subconsciously to gain acceptance or readmittance to groups in the offline world from which they may have been ostracised. The act of mimicking personal behaviour, even unconsciously, has been shown to enhance the likelihood of relationship development in both parties (Lakin, Chartrand, and Arkin 2008). Similarly, people align themselves with those who reflect their values (Posner 2010). Such value congruence builds trust and encourages people to share more information about themselves online on those e-business websites that reflect their values (Cazier, Shao, and Louis 2007). People often post personal and, at times, inappropriate information, video clips and photos of themselves on social networking sites like Facebook. While in some cases this is a result of ignorance about how to configure privacy settings (Collins 2010), in others, there appears to be a lack of concern for personal privacy online (Acquisti and Gross 2006). Using a combination of online survey and semi-structured interviews this research explores the disinhibition effect (Suler 2004) that online conditions may create, allowing people to reveal more private information about them than perhaps they should. It found that there is a decreased need for social affiliation in online communities than offline. While people seek to reflect the values of their friends on social networks to gain ap-

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proval, the investigation found insufficient support for this being the result of mimetic behavior. Similarly there was insufficient evidence of the need for social affiliation being more important than personal security as a driver of risky information posts on social networks. While online communities create a sense of belonging, and therefore of security, the aspiration towards group membership in an online community was not found to be a driver of risky behavior. Belonging to an online social group may enhance perceptions of protection and security but not to the extent that it violates individual privacy perceptions. This research will be of particular interest to managers and marketing professionals who engage with their customers via social networking services. The use of mimetic behaviour to encourage a sense of value congruence in customers could promote interaction and engagement between the business and its online community in a way that will be reflected in their purchasing behaviours. This research provides insight into the transition between similar behaviours in the online and offline worlds.

**Keywords:** belonging, social group formation, risky behaviour
PHD Papers
Challenge in Sharing Tacit Knowledge: Academicians’ Behavior towards Developing a web Portal for Sharing Research Ideas

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Abstract: Academicians’ collective memories soft information, such as research ideas, expertise, experiences, academic skills, know-what, know-how and know-why which inherently it is considered should be made accessible. The Higher Education Institution needs to identify, collect, classify, verbalize and diffuse the academicians’ soft information specifically research ideas present in the university for knowledge enrichment. This can be implemented by the academicians actively sharing their research ideas with others. Actively sharing research ideas by academicians will have great impact on the enrichment of their intellectual capability as most of the valuable knowledge resides in one’s brain. However, as there is no specific medium to bring their research ideas into the surface and be visible to others, the precious research ideas still remain in the academicians’ brains. Therefore, the objective of the study is to explore academicians’ behavior toward the development of a sharing research ideas web portal at private university colleges in Malaysia. This study used the qualitative method that is a multiple cases study. The study refers to four private university colleges in Malaysia. In-depth interview, focus group discussion and document analysis were formed the data collection for this study. The theory of Planned Behavior by Ajzen (1991) was used to determine academicians’ behavior. This study showed that the academicians’ attitude, subjective norms, and perceived behavioral control towards developing a web portal for sharing research ideas all affect their intention to share their research ideas with others.

Keywords: academician, sharing research idea, attitude, subjective norm, perceived behavioral control, intention

Acceptance of new Technologies in HR: E-Recruitment in Organizations

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Abstract: Technology can be used to enhance performance, quicken decision making, and provide cost saving. The Internet has changed everything. With In-
Internet recruiting, a company can place notice of a vacancy on its website or list it with one of online job or career websites. The use of Internet and world-wide-web to match candidates to jobs through electronic databases that store information on jobs and job candidates is Internet recruiting. Web-site is a quick and cheap recruitment source and can be very efficient in retaining employees for long term in organization. E-Recruitment is one of the most successful e-Commerce applications as a method for quickly reaching a large pool of the potential job seekers. E-Recruitment is becoming increasingly popular since the Internet has no geographical boundaries. To attract new employees, some organizations use their e-Recruitment websites or portals as a means of identifying internal job candidates for new positions or promotions. In this paper we analyse the strategies and the methods of recruitment through the Internet in regard to the traditional methods of recruitment used by large organizations from Dambovita County. We also analyse the advantages and the disadvantages of using such method, what kind of organization rather use e-Recruitment, as well as, what kind of employees are rather attracted by e-Recruitment. This paper is a descriptive research based empirical data sources. The empirical data used for the research is for the most part provided by the data of the large organizations from Dambovita County. The article is presenting the way in which the organizations use technology increases or decreases its positive net effect on them. Technology is, after all, nothing than a tool. Through the Internet, HR can develop a powerful recruitment program, that helps manage the highly competitive and time-consuming process of finding skilled personnel.

**Keywords**: new technologies, e-recruitment, internet, employees, efficiency, large organizations

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**Identifying Entrepreneurial Competencies Which Lead to Innovative Performance in Malaysian Academic Libraries**

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**Abstract**: This paper identifies entrepreneurial competencies and the outcomes measured as innovative performance demonstrated by academic librarians. By using a literature review, purposive sampling, multiple case studies and interviews we discovered that the antecedents of entrepreneurial competencies include recognizing opportunities, initiating innovation and strategic thinking. These antecedents influence academic librarians’ innovative performance which was evaluated based on generativity or idea generation, championing and formative in-

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vestigation. This study explores entrepreneurial competencies and innovative performance in Malaysian research universities.

**Keywords:** entrepreneurial competencies, innovative performance, academic librarian

### Information Sharing Problems and Construction Efficiency

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**Abstract:** Information can be seen as one of the most important assets that an organisation can possess. Utilised correctly, information may allow an organisation, irrespective of its industry or domain, to communicate, operate, plan, and make decisions that would ultimately be beneficial to itself, clients and any other entities that interact with them. This paper will report upon the differences in information management practices for a team of architects and builders. The study reports how they cycle through the inspection stage of a complex construction project involving a multi-million dollar state-of-the-art purpose-built educational building for a prominent Australian university. The study explores how specific domain knowledge and experience plays its part in the way information is documented, maintained and disseminated. The paper articulates the major differences (and any similarities) between the processes and techniques used by the respective architects and builders. It also explores the reliance of tacit knowledge in comparison to that of explicit knowledge. The data was collected over an intensive fourteen-week period in which the investigators used a combination of techniques, which included: document analysis, observations, and one-on-one interviews with builders and architects. Academic rigour was maintained through the triangulation of the data collection process in which data went through a verification stage by third parties via a novel method of experienced researchers ‘observing the observing’. This provided a useful check and balance through the data collection stages. While this novel method will be discussed, the paper will focus on the following major findings: The multiple methods of information recording, coding and storage amongst builders and architects The relationship between tacit knowledge and experience in this specific knowledge domain. Information gathering happing in an ‘ad-hoc’ manner The differences in the level of detail collected, stored and disseminated The numerous amounts of lists created and the duplication of data. Finally, the paper will discuss the implications for future on-the-job collaboration between architects and builders and also the available tech-
nologies, which may facilitate more cohesive and comprehensive information management practices within the construction industry.

**Keywords:** information management, construction industry, knowledge management, information sharing
WIP Papers
Modeling Practices of Competitive Intelligence in Moroccan Firms

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Abstract: In an increasingly complex and constantly changing environment, organizations are facing many constraints caused by stiff competition as a result of increasing globalization of markets which affects all sectors. Production economy, as we know it nowadays, evolves into knowledge economy, technologic economy and information economy. Management of information has become therefore an imperative for any organization wishing to ensure its sustainability. Competitive Intelligence is an important tool for information management for organizations. It allows controlling the information about the external environment and therefore adapting his behavior in advance. Competitive Intelligence identifies opportunities and determinants of success, anticipate threats and prevent risks. It allows organizations to secure, to act and to influence their outside world in a perspective of international competitiveness. However, its practices are not unified, they are often imperfect and minor, where the interest to develop these practices to meet the needs of organizations. It is in this context that our empirical study focuses on Competitive Intelligence practices, especially practices adopted by the Moroccan market, where the concept of Competitive Intelligence itself is misunderstood by the various economic actors. The goal of our research is to develop a unified model of Competitive Intelligence practices adapted to SMEs / SMIs in Morocco. We chose to conduct our research by studying first the existing practices and procedures followed by the Moroccan SMEs / SMIs. Then, we will evaluate these practices via a tool that measures their success. Finally, we will propose a unified model adapted to SMEs / SMIs in Morocco. Our research is thus divided into three parts: Survey of Competitive Intelligence practices in Moroccan SMEs / SMIs. Tool for assessing the degree of success of Competitive Intelligence practices. Summary of the survey, evaluation and proposal of a new model of Competitive Intelligence practices.

Keywords: competitive intelligence (CI), strategy, information system, modeling
Towards an e-Health Strategy for Vietnam - Issues and Approaches

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Abstract: Vietnam has a population of 91.5 million with 70% living in rural areas, many of which are not well serviced by infrastructure of any form that would support e-health. There is no defined e-health infrastructure or management strategy in Vietnam and hence it could be argued that therefore there are no issues. However Vietnam does have a number of population health issues that could be somewhat addressed by e-health initiatives as has occurred in so many other similar geographies. The key problem is how to develop and manage a sustainable e-health strategy and implementation framework. E-health is a prominent part of the landscape in a number of similar countries and there is evidence that significant funding is available for e-health projects, especially in less developed areas such as Vietnam however little progress has been made to date. A number of significant barriers have been identified including a lack of infrastructure to enable e-health delivery, poor strategy development and co-ordinated efforts towards defined goals, skills shortages in critical areas including health information management, mobile technologies and security and a lack of cultural sensitivity by current research groups and funding bodies. Breaking down these barriers is critical to any future progress towards an e-health platform. This paper discusses the Vietnamese health environment, the e-health barriers, drivers and opportunities in Vietnam and outlines factors that will influence future progress towards a time where e-health is an integrated part of the healthcare system.

Keywords: e-health infrastructure management strategy issues

Proposed Mobile Technology Acceptance Model of the Information Services in a Library Context

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Abstract: According to the Education Center for Applied Research findings, it was found that students expect to access their institutes’ services from their handheld devices. While libraries have become an integral part of educational institutions, research findings indicate that library services have only 14.8% usage. This paper aims to investigate the factors that predict a patron’s intentions to accept mobile technology and to develop the proposed model that identify the potential factors
on the mobile technology acceptance of information services in a library context. The work extends the extending in Unified Theory of Acceptance and Use of Technology model (UTAUT2), which is an extension of the Technology Acceptance Model (TAM) and the UTATU model and add technology characteristics and task characteristics variables. The research includes both exploratory and quantitative techniques. There are two stages in the preliminary study: 1) Reviewing and investigating the potential factors from previous research that is relevant to this work. 2) Using semi-structured interviews data by applying check list methods to collect data from potential patrons and patrons of the mobile technology acceptance in the library service context. The contribution of the model is a design guideline for the mobile technology function that consistent of a service function in the library context. In addition, this model will provide a useful tool to help understand and predict patron’s intentions to accept mobile technology of information service in a library context. Other outcomes of this study are the development and enhancement of library services which also provide more choices of the library service process.

**Keywords**: unified theory of acceptance and use of technology model (UTAUT), UTAUT2, task technology fit model, library services, information services, mobile technology