

ECIME 2007
The European Conference
on Information
Management and
Evaluation

University of Montpellier 1
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20-21 September 2007

Edited by

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Trinity College Dublin, Ireland

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Preface

The European Conference on Information Management and Evaluation is hosted this year by the University of Montpellier, France. The Conference Chair is Charles Despres and the Programme Chairs are Egon Berghout from the University of Groningen in The Netherlands and Damien Bruté de Rémur from the University of Montpellier.

The main aim of this Conference is for individuals working in the wide area of information management, including information technology evaluation to come together to share knowledge with their peers interested in the same field of study. In this way we hope that the conference will have a wide appeal.

The opening keynote address this year is by Dr Marguerite Cronk, from Harding University in Arkansas in the USA discussing the subject Synergies of Value Creation. She is a well known figure in the field of information technology evaluation and we are very pleased that she has been able to travel across the Atlantic for this event.

The keynote address on day two is by Charles Ashman from Hewlet Packard Consulting and Integration Europe, Middle East and Africa, and Charles will speak on the topic of "Governance for IT Shared Services: Assuring Post-Implementation Value". Hewlet Packard is well known for its innovative thinking in this area.

With an initial submission of 67 abstracts, after the double blind, peer review process there are 41 papers published in these Conference Proceedings. These papers come from all parts of the world including Belgium, Chile, Denmark, Finland, Greece, India, Ireland, Italy, Jordan, Netherlands, Portugal, Spain, Sweden, Switzerland, United Arab Emirates, Uganda, United Kingdom and the United States of America.

I wish you a most interesting conference.

Dan Remenyi
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September 2007

Conference Executive:

[Frank Bannister](#), Trinity College Dublin, Ireland
[David Barnes](#), University of London, UK
[Egon Berghout](#), Groningen University, Netherlands
[Ann Brown](#), City University Business School, London
[Marguerite Cronk](#), Harding University, USA
[Enrique Dans](#), Instituto de Empresa, Madrid, Spain
[Charles Despres](#), Conservatoire National des Arts et Metiers, Montpellier, France
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[Dan Remenyi](#), Trinity College, Dublin
[Reima Suomi](#), Turku School of Economics, Finland
[Claudine Toffolon](#), Université du Littoral, Calais, France

Committee Members

The conference programme committee consists of key people in the information systems community. The following people have confirmed their participation:

Maria Alaranta (Turku School of Economics and Business, Finland); Baptiste Alcalde (Institut National des Télécommunications (INT); France); Hussein Al-Yaseen (Amman University, Jordan); Yalaho Anicet (University of Jyväskylä, Finland); Nurmi Antti (Helsinki School of Economics, Finland); Joan Ballantine (Queen's University Belfast, UK); Frank Bannister (Trinity College Dublin, Ireland); David Barnes (Royal Holloway, University of London, UK); Peter Bednar (University of Portsmouth, UK); Diane Benjamin (National Health Service UK); Egon Berghout, (University of Groningen, Netherlands); Milena Bobeva (Bournemouth University, UK); [Ashley Braganza](#) (Cranfield Business School, UK); Carole Brooke (University of Lincoln, UK); Ann Brown (CASS Business School, UK); Deborah Bunker (University of New South Wales, Australia); Sven Carlsson (Lund University, Sweden); Ewart Carson (City University, London, UK); Fergal Carton (University College Cork, Ireland); Walter Castelnovo (Università Dell Insubria, Como, Italy); Anna Cavallo (University of Rome, Italy); Yolande Chan (Queen's University, Canada); Arijit Chatterjee (VIT, Pune India); Sunil Choenni (University of Twente, The Netherlands); Peter Clutterbuck (University of Queensland, Australia); Baggy Cox (Imperial College, London); [Marguerite Cronk](#) (Harding University, USA); [Salem Dakhli](#) (Université Paris-Dauphine, France); Renata Dameri (University of Genoa, Italy); Paul Davies (University of Glamorgan, UK); Guillermo de Haro (Instituto de Empresa, Spain); Francois Deltour, (GET-ENST-Bretagne Engineering School, France); Dirk Deschoolmeester (Ghent University, Belgium); Eduardo Dinez (Escola de Administracao de Empresas, de Sao Paulo, Brazil); Neil Doherty (Loughborough University UK); [Alea Fairchild](#) (University of Twente, The Netherlands); Ulrich Frank (University Duisburg-Essen, Germany); Karsten Gareis (Empirica Gesellschaft für Kommunikations- und Technologieforschung mbH, Germany); [Ken Grant](#) (Ryerson University, Canada); Kevin Grant (Glasgow Caledonian University, UK); Ginevra Gravili (University degli Studi di Lecce, Italy); Paul Griffiths (The Birchman Group, Chile); Kerstin Grundén (University of Trollhättan/Uddevalla, Sweden); Petri Hallikainen (Helsinki School of Economics, Finland); Elad Harison (University of Groningen, The Netherlands); Ciara Heavin (University College Cork, Ireland); Jonas Hedman (Lund University, Sweden); Matthew Hinton (Open University Business School, UK); Ranjan Kini (Indiana University Northwest, USA); Lutz Kirchner (University of Duisburg-Essen, Germany); Juha Kontio (Turku University of Applied Sciences, Finland); Jussi Koskinen (University of Jyväskylä, Finland); Zuzana Kucerova (Institut National des Telecommunications, France); Roberta Lamb (University of Hawaii, USA); Przemysław Lech (University of Gdańsk, Poland); Matti Linna (University of Vaasa, Finland); Gus Liston (Irish Management Institute, Dublin); Sam Lubbe (UNISA, Pretoria, South Africa); Paolo Magrassi (Saugatuck Technology, Westport, CT, USA); Steve Martin (University of East London, UK); John McAvoy (University College Cork, Ireland); Annette Mills (University of Canterbury, New Zealand); Arthur Money, (Henley Management College, UK); Jon Morell (Policy Analyst, Michigan, USA); Karen Neville (University College Cork, Ireland); Harri Oinas-Kukkonen (University of Oulu, Finland); Tiago Oliveira (Universidade Nova de Lisboa, Portugal); Roslina Othman (International Islamic University, Malaysia); Sevgi Özkan (Middle East Technical University, Ankara, Turkey); Gary Pan (University of Melbourne, Australia); Thanos Papadopoulos (The University of Warwick , UK); Shaun Pather (Cape Peninsula University of Technology, South Africa); Elias Pimenidis (University of East London, UK); Zijad Pita (RMIT University, Australia); Mirja Pulkkinen (University of Jyväskylä, Finland); Nayem Rahman (Intel Corporation, Aloha, OR, USA); Birger Rapp (University of Linköping, Sweden); Dan Remenyi (Trinity College Dublin, Ireland); Hugo Rehesaar (Sydney, Australia); [Dimitrios Rigas](#) (University of Bradford, UK); [Narcyz Roztocki](#) (State University of New York at New Paltz, USA); Heikki Saastamoinen (University of Jyväskylä, Finland); Hannu Salmela (Turku

School of Economics and Business Administration, Finland); Elsje Scott (University of Cape Town, South Africa); Wesley Shu (National Central University, Taiwan); Gilbert Silvius (Utrecht University of Professional Education, Netherlands); Mohini Singh (RMIT University, Australia); [Seppo Sirkemaa](#) (Turku School of Economics and Business Administration, Finland); Gregory Skulmoski (Zayed University, UAE); Riccardo Spinelli (Universita Di Genova, Italy); Katarina Stanoevska (University of St Gallen, Switzerland); Reima Suomi (Turku School of Economics and Business Administration, Finland); Jarmo Tähtkäpää (Turku School of Economics and Business Administration, Finland); Claudine Toffolon (Université du Littoral-Côte d'Opale, France); Minhong Wang (The University of Hong Kong, Hong Kong); Leslie Willcocks (London School of Economics, UK); Morris Williams (University of the West of England, UK); Les Worrall, (Wolverhampton University Business School, UK); Tuan Yu (University of Kent, UK); [Xiaohui Zhao](#), (Swinburne University of Technology, Australia).

Biographies of Conference Chairs, Programme Chair and Keynote Speaker

Conference Chair



Dr Charles Despres obtained his doctorate from the University of Utah (USA) by working on the organising implications of large-scale information systems. His subsequent research has centred on the triad of information, organisation and culture, and since 1997 his academic and professional career has concentrated on the emerging field of Knowledge Management. He joined IMD (Lausanne, Switzerland) in 1991 as an ABD Research Fellow, completed his doctoral work and moved to the south of France four years later to assume research / professorial roles at the Institute d'Administration des Entreprises, Aix-en-Provence and the Theseus Institute (Sophia Antipolis). Charles was Professor of Organisation and

Director of International Development at the Graduate School of Business, Marseille-Provence from 1997 - 2002. In 2003 he joined the Conservatoire National des Arts et Metiers in Paris as Director of Programs at its International Institute of Management. He has authored around 75 articles, chapters, monographs, grants or proceedings, and co-authored two books, *Leveraged Innovation* (Macmillan, 1998, with F. Bidault & C. Butler) and *Knowledge Horizons* (Butterworth-Heinemann, 2000, with D. Chauvel).

Programme Chairs

Dr Egon Berghout is Professor of Information Management at the University of Groningen, The Netherlands. His research interest covers the entire field of Information Management, Information Systems and philosophy in general. His specialisation concerns the economical aspects of information technology. How organisations can create and sustain superior (competitive) performance through information technology? A list of recent publication can be found [here](#). He is a Fellow of the Research School of Systems, Organizations and Management (SOM) and is associated to the London School of Economics, City University Business School and TIAS Business School. He is also Principal Associate of M&I/PARTNERS Consultants of Management and ICT.



Damien Bruté de Rémur

Damien Bruté de Rémur is a French teacher-researcher, specialist in intelligence economic. Lecturer in Sciences of Management at the University Montpellier 1 (UFR AES) in laboratory GESEM (Group of studies in sciences of the company and the markets) and director of the IR2I (Institute of research in informational intelligence), he is the author of several works on the economic intelligence.

Keynote Speakers

Dr Marguerite Cronk is currently an Associate Professor and Director of the IT Program at Harding University, AR, USA. Reet has been involved with IT evaluation research for 10 years, with publications in journals such as the *Journal of Information Management and Logistics*, the *South African Business Review*, and the *Electronic Journal of Business Research Methods*. She has been involved with the European Conference on IT Evaluation (now ECIME) as presenter chair and reviewer since 1997, introducing novel concepts and methodologies such as Holistic Construal and Value Alignment to the IT evaluation field.



Charles Ashman is one of HP's leading strategic senior business managers and IT consultants. He is ITIL certified and has over 30 years experience in the management of IT business and IT solutions to meet complex business and social requirements. He gained this experience whilst working in senior consulting and operational management posts. Charles began working for HP in 1990, and has undertaken extensive assignments not only in the IT industry but also the telecommunications, financial, manufacturing and public sectors and is Practice Principal, HP Consulting and Integration, Europe, Middle East and Africa. Having held his current position since June 2005, Charles' role involves the managing of new solution launches and business improvement programmes, including the IT Shared Services consulting initiative launch. Prior to this, Charles held positions based in the Middle East, working in HP's Enterprise, Server and Storage division, ultimately managing the Server, Storage and Software sales, marketing and product management unit. Before moving to his current role in Consulting and Integration within the HP Services division, Charles held the role of Middle East director, pre-sales for what was then the HP Customer Solutions Group



Biographies of contributing authors (in alphabetical order)

Povl Erik Rostgaard Andersen, PhD, is Associate Professor at the Department of Business studies, Aarhus School of Business, Aarhus University in Denmark. His research interests relate to management and evaluation of IT adoptions in health care.

Linda Bergkvist is currently a Ph.D. Student at the Faculty of Economic Sciences, Communication and IT at the department of Information Systems at Karlstad University. She holds a Degree of Master in Information Systems and Project Management, both from Karlstad University. Her primary area of interest includes outsourcing and its impact on the process of Information Systems Development.

David Barnes is Senior Lecturer in Operations and Strategic Management at the School of Management, Royal Holloway, University of London. David's research interests centre on the strategic management of operations; the impact of the Internet-based ICTs of e-business on operations management; performance management; and the management of SMEs.

Marian Carcary is a final year doctoral candidate at Limerick Institute of Technology, Ireland. Her research on ex-post ICT evaluation in the higher education sector is funded by the Irish Research Council for Science, Engineering and Technology. She obtained her Masters degree in Information Technology in 2004. Since 1998, she is working as a member of Faculty in the Department of Information Technology at LIT.

Fergal Carton, BSc, MBA Fergal Carton is a College Lecturer in Business Information Systems at University College Cork. With 15 years experience in IT consulting, starting with BCG in London, he has worked on projects for over 30 major businesses. Most recently he spent 4 years implementing a global Oracle ERP system in EMC2's international subsidiaries. Fergal's research focus is on the impact of ERP systems on management decision making.

Walter Castelnovo is Assistant Professor in the Faculty of Science at the University of Insubria, Italy. He teaches Information Systems and Organization to students in Computer Science. His research interests are in the area of technological and organizational innovation in Public Administration. He is the strategic consultant of ANCITEL Lombardia in the area of E-Government and he is a permanent invited member of the Department of Institutional Reforms, E-Government, Cooperation and Communitarian Policies of ANCI Lombardia (the Association of Municipalities of Lombardia, Italy).

Pietro Cipresso collaborates with the Institute of Human, Language and Environmental Sciences. His research interests include agent-based computational economics, multi-agent models, simulations and artificial life. His teaching interests include economic psychology, media and general psychology. Has graduated at Bocconi University of Milan and is a Ph.D. candidate at IULM University of Milan. Recent publications include: P. Cipresso, M.A. Villamira (2007) Shaping the “post-carbon” society: changes at systemic level in transport, housing and consumer behaviour, an Agent-based Computational Economics approach in Proc. of International Association for Research in Economic Psychology Conference, Ljubljana, Slovenia, September 2007. P. Cipresso, R. Foresti (2007), Modular object-oriented dynamic learning environment based on social constructionist philosophy at European Computing and Philosophy Conference, Enschede, The Netherlands, June 2007. P. Cipresso, M.A. Villamira (2007) Rational expectation and microfoundation for Hyperinflated economies in Proc. of Workshop in artificial life and computational intelligence, Sampieri, Italy, September 2007.

Frances Cleary is currently working in the role of researcher/test engineer at the Telecommunications Software & Systems Group (TSSG) research centre. Frances has worked in European Funded projects such as Daidalos (Designing Advanced network Interfaces for the Delivery and Administration of Location independent, Optimised personal Services) and ESQAT (Embedded Software Quality Assurance & Testing). She has been involved in various test bed design & Planning, test bed deployment and test execution phases. She has also worked in various Integration Planning and conformance test execution phases throughout the lifespan of many projects. Frances is also actively involved in internal TSSG test bed initiatives and Ipv6 centre of excellence related activities within TSSG. From 2000-2004 she worked for Ericsson Systems Expertise based in Athlone, Ireland during her time there she worked in the Fault Management, Access and Core telecommunication areas, as a test engineer.

Lucy Dadayan is a PhD candidate at Department of Informatics, University at Albany. Lucy completed her MPA in Public Administration at the Rockefeller College, University at Albany. Lucy works as a policy analyst at the Rockefeller Institute of Government and as a research assistant with the Center for Technology in Government. Her research interests are in decision making and judgment, IT investment evaluations, e-government evaluation, health informatics.

Renata Paola Dameri, graduate in Economics, professor at the University of Genova, Italy, in Business Administration and Management Information Systems. Research interests: Information Systems, Accounting IS, IT governance, ERP systems. Several papers at ECITE from 2001. Chairman at the ECITE in 2006, held at the University of Genova.

Julie Dawson is undertaking the project management of an ERP system at a UK furniture manufacturer whilst studying for her Masters by Learning Contract at the University of Lincoln. Her Masters is centred around her experiences project managing the ERP system. The author wishes to share and discuss her organisational experiences with academia and add her informative research to literature.

Martin D’Cruz is the Vice-President of Managed Care Services for St. Vincent Health (a 18 hospital system) in Indiana. He is also an adjunct faculty at Graduate School of Public & Environmental Health, Indiana University, NW teaching courses in Managed Care. At St.Vincent Health, he is responsible for both hospitals and physician healthcare operations. His previous healthcare experiences include working for Blue Cross of

Michigan, KPMG Peat Marwick and hospital systems in the mid-west in healthcare strategic planning. Martin received his BS in from Seton Hall University and his MBA from Rutgers University Graduate School of Management. He is a Fellow of HealthCare Financial Management Association and currently serves on the National Advisory Council on addressing issues related to Healthcare Price Transparency.

Neil Doherty gained his PhD in software engineering from the University of Bradford. He is currently Professor of Information Management in the Business School, at Loughborough University. His research interests include: the treatment of organisational issues in systems development projects; success and failure in systems development projects and strategic information systems planning.

Dr Dyerson is Senior Lecturer in Economics and Strategic Management at the School of Management, Royal Holloway, University of London. Romano's main research interests include tracking the success of large scale computerisation, the relationship between strategy and competitive advantage and the processes of innovation in small hi-tech companies. He is interested in exploring how firms cope with change and how this interacts with strategy.

Abhishek Goyal a second year student of top notch MBA college in India and have participated in many international conferences.

Kerstin Grunden is a senior lecturer in informatics at University West in Sweden. She has also a back-ground as a sociologist. She has made several evaluation studies of the implementation of IT in public organisations. She has developed a process-oriented evaluation model MOA-L that has been used in the studies. Her research fields are mainly eGovernment, e-learning at work and CSCW.

Antonio Henriques Martins Guerreiro is Teaching Assistant in the Department of Management – University of Evora (Portugal). Research (PhD) student in the School of Management & Economics – Queen's University at Belfast, U.K (2003-2005). Actually his PhD. works are being continued in the University of Evora (Portugal).

Pia Gustafsson has received her MSc in Electrical Engineering from the Royal Institute of Technology, KTH, and Sweden in 2006. She is now a PhD student at the same department. Her main research area is how business value is achieved from IT/IS systems.

Dr Harindranath is Senior Lecturer in Management Information Systems at the School of Management, Royal Holloway, University of London. Hari's main research interests include ICT in SMEs, information infrastructure policy and electronic government initiatives in transition economies, and ICT and economic development.

Ari Hirvonen is CTO and Enterprise Architecture Consulting manager in TietoEnator GMR, the leading ICT service provider in the Nordic countries. Dr. Hirvonen has long practitioner experience in EA consulting and active role in EA research in Finland.

Martin Hoffmann holds a Master degree in Software Engineering. Currently, he is a PhD student at the University of Jyväskylä, Finland. His research activities mainly focus on software and enterprise architecture evaluation.

Anita Kealy is an MSc student in Waterford Institute of Technology, due to complete her research studies in 2007. Anita graduated with an honours degree in Applied computing in

2005, and has had a long-standing interest in the interaction between technology and online consumers. Her current research offers insight into virtual companies privacy policy impact on consumer security and comfort.

Ranjan Kini is a Professor of Information Systems at the School of Business and Economics, Indiana University Northwest, Gary, IN, USA. He is an active member of several professional organizations. Kini has published over forty papers in refereed journals and conference proceedings. His current research interests are in Electronic and Mobile Commerce, Data Mining, ICT in Healthcare, ICT Outsourcing, etc.

Florence Nameere Kivunike Doctoral student at the Department of Computer and Systems Sciences – DSV, Stockholm University, researching information society assessment as an input into efficient policy making especially in developing countries. I specifically want to study how we attribute change (assess impact) to the information society starting with a review of the existing methodologies.

Elina Kontio is currently a PhD Candidate at Faculty of Medicine in the Department of Nursing Science at University of Turku. She holds Master's Degree in Nursing Science from University of Turku and is a registered Nurse. Her primary areas of interest includes enterprise resource planning systems and decision making in hospitals.

Andreas Koskeris has a degree on Computer Engineering and Informatics. He is now technical responsible of Research Academic Computer Technology Institute's Telematics Center, with the task to act as technical coordinator of all Department R&D projects. His research interests and recent publications include the following topics: - Regional development through ICT penetration, - Risk-Crisis management systems, - E-government, - Web technologies and applications, - Simulation.

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Perceptions of Information Technology/Information Systems Value/ Utilisation in Saudi Organisations

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Abstract: The paper introduces findings from a survey of 30 Information Technology (IT) managers of Saudi organizations to establish general perceptions towards added value(s) of IT investments. The results of the survey, administered during the spring of 2007, show that the majority of respondents perceived IT resources to be of great value in various planning and decision-making stages. In addition, the survey indicates that the majority of respondents are satisfied with their use of IT resources deployed mainly to support the informational needs of managers and decision makers. A result greatly negates many reported failures and low utilisation levels of technologies and systems alike.

Keywords: Information technology, information systems, strategic alignment, information technology investments and information technology value

Evaluating an Electronic Patient Medicine Module Implementation in two Hospital Settings: An Occasion for new Types of Errors

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Abstract: In recent years, there has been an increased demand to exploit the possibilities of Information Technology (IT) in health care. In many hospitals, focus is on Electronic Health care Records (EHRs) which are depicted as central technologies in supporting the examination, treatment, and care of patients. One of the modules of the EHR system is the Electronic Patient Medicine (EPM) module which is considered an important means for reducing medical errors. In the literature, focus is primarily on those medical errors that are reduced when introducing EPM modules, whereas there is scarce evidence of the new types of errors that might occur. Purpose: This paper presents an evaluation study of an EPM module implementation in an orthopaedic surgery ward and in a medical ward. The purpose of the evaluation is to investigate the nature of the errors that are reduced and the new types of errors that occur when the doctors are interacting with the EPM module. We argue that systematic evaluation attempts are necessary in order to investigate the unintended consequences that may appear when implementing IT in health care. Setting and methods: The study is explorative. It is carried out in an orthopaedic surgery ward and in a medical ward in two medium-sized Danish hospitals. Through observation studies, semi-structured interviews with health care professionals, and focus group interviews, we investigate the types of errors that may appear when implementing a new IT system such as the EPM module. We compare the findings with existing studies on this topic. Findings: The findings from our study show that earlier types of errors are reduced by the use of the EPM module. At the same time, however, the study shows that new types of errors occur. These errors can be grouped into two main categories: one type is related to the interaction between the doctor and the EPM module; the other type is related to the influence that the EPM system has on the coordination of the clinical work. Discussion and conclusions: The findings are discussed along with ways in which to reduce some of the new types of errors that appear. One of the main conclusions is that there should be more focus on evaluating IT implementations in health care. This should be done in order to pay more attention to the unintended consequences that may emerge when health care professionals are using technology in their clinical practices. On the basis of the evaluation, it is furthermore important for management to set up strategies to improve the use of IT in health care.

Keywords: Evaluation, medical errors, health care, electronic patient medicine module, unintended consequences

Multi-level Evaluation Settings for Semantic-Based Access Approaches in Image Retrieval: Process and Future Directives

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Abstract: The improvement of image retrieval systems has become an important research objective in the context of widely spread image sharing platforms on the internet. Especially images in comparison to textual information require special descriptions, retrieval methods and systems. Due to the increasing number of digital visual resources, the storage and especially the retrieval demands well-performing search functionalities and more advanced image repositories as described in the following paper. The challenges of evaluations dealing with such novel image retrieval systems and their concepts are shortly described. Findings will contribute to improving further development of such new search concepts. Furthermore, an enhanced image retrieval system offering a semantic-based multiple access approach, as developed in the research project *Living Memory*, is briefly introduced. In order to evaluate the expected benefits a complex multiple-setting evaluation framework was set up. The specified evaluation setting integrates the described challenges and combines multiple methods and diverse settings to measure the various aspects and influences of this new approach of image retrieval. The framework includes a short term laboratory usability test that can be compared to retrieval efficiency measures to identify the actual retrieval efficiency while a parallel long term study will help to unveil the usability quality of the semantic-based, multiple access approach. Alongside changes in the user's behaviour while operating with the retrieval system can be analysed and observed. The overall conclusion of all test results from the long and short term test will finally provide detailed data material which allows a comprehensive evaluation of a systems performance and usability.

The proposed evaluation framework and the applicability of various instruments and methods have been implemented for the evaluation of the *Living Memory* system in a pre-test. Based on the results of this study we are able to discuss the validity of our proposed framework and give further suggestions.

Keywords: Evaluation, multiple access approach, image retrieval, semantic retrieval, visual information retrieval system

ISD Activities and Their Suitability for Outsourcing – A Literature Review

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Abstract: With the introduction of Information Technology (IT) it has become easier for firms to co-operate globally. A result of this globalization is the growth of outsourcing of ISD activities. Through outsourcing of ISD the complexity of managing the ISD process increases, which motivates research enhancing the understanding of the conditions that are critical during ISD outsourcing. The research questions addressed in the paper are: Which ISD activities are contracted in onshoring and offshoring? and How does the nature (complex versus simple) of ISD activities suit outsourcing? To answer the research questions, a literature review on ISD/IS outsourcing has been conducted.

From the literature review I found that ISD activities relating to the ISD phase of systems design are contracted within both onshoring and offshoring. However, construction activities, such as software coding and software testing, are commonly contracted with far distant IT-suppliers. Another finding is that the content of the ISD process determines the suitability for outsourcing. The literature review shows that the ISD activities suitable for outsourcing are the ones that can be structured into individual modules, are perceived as routine work and are not dependent on knowledge of the firm. From the literature review it was also found that ISD activities relating to construction, operation and maintenance management often satisfy these requirements. Additionally, it was found that the more unstructured the ISD activities are the more important the use of a common ISD methodology becomes. One contribution from the review is that research on outsourcing the ISD process demands specification of the specific case of outsourcing and the type of ISD activity included in the contractual agreement. Depending on the specific case of ISD outsourcing and the type of ISD activity contracted, the level of resources needed for the management of the ISD process and the client–IT-supplier relationship varies.

Keywords: Information systems development, outsourcing, onshoring, offshoring

Ex-Post Evaluation of the Implementation of a Student Administrative MIS in the Irish Institute of Technology (IoT) Sector: A Cross-Case Comparative Analysis

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Abstract: ICT evaluation research is active across many fields of study. However, comparative to other sectors, there are a limited number of studies concerning ICT evaluation in Higher Education Institutions (HEI). This paucity of research needs to be addressed as the need for HEIs to improve operational performance is now more urgent and challenging. This is due to declining student numbers and changes in student profiles, increased competition between educational establishments, and the need for transparency with respect to academic activities.

This paper addresses the implementation of a large-scale ICT student administrative system across the Irish Institute of Technology (IoT) sector. The impact of system introduction across five IoTs is explored through a cross-case comparative analysis. System introduction across those IoTs was problematic; yet a significant flow of benefits also materialised. This paper explores the interconnectivity of these impacts and their variances across the case study sites. It further provides some policy guidelines for realising future rewards.

Keywords: ICT evaluation, ex-post evaluation, ICT problems, ICT benefits, ICT in Higher Education Institutions

Integration of Enterprise Applications and Functional fit: The Role of ERP in Supporting Management Objectives

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Abstract: Companies have been investing in integrated enterprise applications for over a decade, without firm evidence of a return on investment. Much research has centered on the factors that lead to successful implementation projects (eg: Holland and Light, 1999; Shanks and Seddon, 2000), but to date there appears to be little research on the longer term impact of ERP systems on the organisation (Heili and Vinck, 2008). Although ERP applications have meant that there is more operational information available to managers, the data stored in ERP applications requires much off-line manipulation in order to be meaningful to managers. In addition, the gradual evolution of physical processes over time inevitably leads to a gap between the ERP system, and the reality it is designed to capture (Lee and Lee, 2000). Taking the evaluation of management performance against objectives as research domain, and focusing on a case study in the pharmaceutical sector, this paper looks at the footprint of a global ERP system in the day to day decision making of managers in KPC Ltd. Although the ERP implementation resulted in major improvements in data integrity at an operational level, resulting in improved visibility of costs and traceability of transactions for head office, many of the benefits associated with exploiting this information have been compromised by the need to rely on non-integrated tools for certain specific functions. Thus, for decision making purposes, managers must still download data to spreadsheets, where they are manipulated and combined with data from other, non-integrated systems. This paper shows the gap between management actions and the informational and decisional support provided by the ERP.

Keywords: ERP, decision making, data integrity, organisational goals

A Public Value Evaluation of e-Government Policies

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Abstract: Public Administration aims at producing value for citizens; the use of ICTs to improve government and governance, as implied by e-Government, can be considered as a means to increase the public value produced by Public Administration. As a consequence, the policies for e-Government can be evaluated according to their ability to increase the Public Administration capacity of producing public value, both for citizens as users and citizens as operators of Public Administration. In the first case, the policies for e-Government can be evaluated with respect to the quality of the services delivered to citizens; in the latter case they can be evaluated with respect to their ability to improve the system of Public Administration.

In this paper, we describe a public value evaluation of two different systems of support to e-Government projects implemented in Lombardy Region (Italy). Both systems support Small Local Government Organizations that set up aggregations in order to implement innovation projects. The two systems we will consider concern the funding for e-Government projects according to the Italian National Action Plan for e-Government and the Regional Government funding for the implementation of Inter-organizational Information Systems for Local Government (SISCoTEL).

Considering the stability in time, the attractivity and the level of trust within the funded aggregations as indicators of public value (considered from an internal point of view), in the paper we will use data concerning the Local Government in Lombardy to compare the two supporting models according to their capacity to set up aggregations that are stable, attractive and that could strengthen the level of trust among the partners.

In section 1 we will describe some of the actions currently in use in Italy to support the spread of e-Government at a local level. In section 2 we will describe the models for supporting innovation implemented in the National Action Plan for e-Government and in the Regional Plan for the activation of SISCoTELS. In section 3 we will compare the main characteristics of the two supporting models. Finally, in section 4 we will evaluate the two models, from a public value point of view, with respect to their capacity to strengthen the cooperation among Local Government organizations.

Keywords: e-Government, public value, local government, intercommunal cooperation

Human Behaviour and Organisational Framework: A Multi-Agent Approach To Shape Information Management Systems

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Abstract: Collaborative approaches and multi-agent architectures may help us to understand information systems. In developing an information management system, we have to deal with both human behaviours and organisational frameworks. This work, using a multi-agent approach, is based on a community of agents interacting in an organised environment. Our purpose is to shape information management systems starting with human behaviours and using a multi-agent system (MAS). So, the analysis is conducted with two different aspects in mind. From one side, we analyse human behaviours, modelling agents' features and letting them interact in the environment we created. From the other side, we can choose our preferred organisational framework through the building of an organised environment and then consider the results of any changes in the environment. This model concentrates on the integration of computer systems from the viewpoint of the organisation. To be able to model an information system, the ability to analyse with different multi-agent systems is the key to the implementation of such methodology. Obviously, it is very important to be careful in the choosing among the various features that compose an information management system. Decision making and competitive strategies are essential components to consider in the creation phase of agents and environments. An error at this level might compromise integration of the whole model, making the outcome totally unacceptable. The main characteristics of this approach are its robustness in different situations and its high performance.

Keywords: Multi-agent systems (MAS), information management systems, organisational framework, human behaviour, economic psychology

Large Scale Research Project, Daidalos Evaluation Framework

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Abstract: For large scale research projects operational over a phased timeframe of 2 years or more, the need to take a step back and evaluate their stance and direction is an important activity in providing relevant feedback and recommendations to guide the project towards success in its consecutive phase. The identification of measurable goals and evaluation profile procedures to effectively work towards a useful evaluation of the project was one of the main aims of the Evaluation taskforce. As part of the scope of the evaluation work in Daidalos, a set of evaluation criteria for Daidalos phase I processes, results and impact were determined and used as a scoreboard for the evaluation and recommendation report. Evaluating criterion such as Relevance, Potential Impact, Scientific & Technical Excellence and Resource Mobilisation provided beneficial recommendations, taking stock of previous achievements and future innovative ideas ensuring that they will impact the project as planned. As a starting point these criteria were derived from the ones used by European Commission for evaluating R&D projects. The final evaluation report included the scoreboard results, and an analysis of these results along with a set of recommendations for Daidalos Phase II. Qualitative scenario evaluation activities were adopted and implemented in an attempt to capture the richness of people's experience of the Nidaros scenario in their own terms, conveying the Daidalos technology concept transfer towards end users. By providing you with an insight into the evaluation methodology used within the Daidalos project, we hope to broaden your knowledge by introducing you to the large scale Daidalos evaluation framework used by the Daidalos research project and highlight some of the managerial and organisational aspects involved during this process.

Keywords: Evaluation, integration, validation, scenario feedback, recommendations

ICT Adoption Issues in ICT SMEs in the West Midlands UK – Beyond the differences

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Abstract: The UK West Midlands(WM) regional development agency (Advantage West Midlands (AWM)) is keen to encourage development of business in the area including help in the adoption of Information and Communication Technology (ICT) by more Small to Medium Enterprises (SMEs). For many of these SMEs innovation is not about 'blue-sky' research and leading edge technology but about the adoption of technology that will allow new processes to be employed by the company that are innovative for them. Most research to date centres on SMEs in a variety of sectors but very little work has been completed on the adoption of new technologies for SMEs whose core business is ICT. The assumption is that ICT companies are 'different' when it comes to the adoption of technology, but there is much evidence to suggest that they also have the same inhibitors. For ICT companies the adoption of new technology is crucial to their business and yet we continue to believe that their needs are not those associated with companies whose core business is something other than ICT. This research examined issues that are relevant to successful adoption in ICT companies as defined by AWM ICT Cluster and was conducted during March 2007 and involved more than 70 ICT SMEs in the West Midlands (WM) UK. It indicates that many common misconceptions are endemic in ICT companies as in any other sector. The indicators show that the same business issues are inherent in the ICT sector and need addressing as their understanding of these issues is key to successful adoption for other sectors too.

Keywords: IT adoption, IT value, SMEs, industry clusters, Implementation

The Role of Technology in Medical Decision-Making and Judgment

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Abstract: Investments in health care technology have a big potential to bring both tangible and intangible positive returns. Wide adoption of health care technology can significantly reduce the rate of medical errors. Health care technology investments are often justified and evaluated based on its' clinical effectiveness and financial cost-benefit analysis. However, the success of health care technology is partially determined by the adoption, use, diffusion and smart utilization by different stakeholders. Thus, there is a concurrent need to tackle the problem of evaluating the use and attitudes towards health care technology while balancing financial costs and benefits of medical technology as well as its' clinical effectiveness. Health care technology can be classified into two major categories: medical technology and health information technology (HIT). While the focus of medical technology is the detection and treatment of disease, the HIT is mostly concerned with management of health care delivery logistics, and analysis and administration of health care financial and clinical operations. There are different factors that either promote or hinder the growth, adoption and diffusion of health care technology.

This paper provides a literature review of recent studies that focus on the impact of information and communication technologies on public health in general and the impact of medical technologies on early detection, diagnosis and treatment of many diseases in particular. The following paper also attempts to evaluate the effectiveness and impact of relatively novice medical technology - digital mammography, from the physicians' decision making perspectives. The following research questions are emphasized:

Are radiologists using different thresholds and cues with full-film digital mammography compared to screen-film mammography?

Is digital mammography assisting to improve the accuracy of radiologists' judgments?

How much more or less information do radiologists obtain with digital mammography images compared to information provided by full-film mammography images.

Do radiologists rely on and trust digital mammography systems and the integrated computer-aided detection systems for interpreting mammography images and making decisions?

Finally, this paper attempts to compare and contrast the features and characteristics provided by digital versus film mammography from multiple stakeholder perspectives.

Keywords: Health information technology, medical decision support systems, medical decision making and judgment, digital mammography

Using IT to Enhance Customers Loyalty and Trust in Retail Banking

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Abstract: Trust is one of the key elements in the company-customer relationship, especially if the company is a bank or a financial institution. Trust also determines customer loyalty and, in an indirect way, long term performance. After recent financial scandals, banks have assumed, to the eyes of customers, the role of "bad adviser". This has seriously threatened that confidence relationship, causing a reduction in the relationship stability. At the same time, authorities have tried to raise the level of protection of investors, through laws which aim to increase the transparency in bank-customer relationship and to protect savings.

Therefore, banks had to face a double requirement: on one side, the need to comply to more stringent compliance requirements set by national and international authorities, on the other side, to implement business strategies to win back customers' confidence and to consolidate relationships that, in the meantime, had been weakened.

Sanpaolo IMI, one of the main Italian banks, with European importance, has been working for a long time to set up a model to increase efficiency, effectiveness and quality in investment advisory service and, consequently, to increase customer satisfaction.

The development of IT tools has taken up a pivotal role in supporting front end staff to pursue the excellence in customer advisory. IT can be used both to support strategies aiming to strengthen the customer confidence and loyalty, and to answer to law requirements, taking advantage of synergies between business and compliance needs.

The aim of this paper is to describe the role that IT can have for banks, in order to support confidence and loyalty business strategies in the long term, with positive performance returns. The topic will be discussed first through the definition of some theoretical hypothesis supported by literature, then through the analysis of Intesasanpaolo business case. Finally, some brief conclusions will demonstrate ad the business case could be paradigmatica for the strategic behaviour of credit institutions.

Keywords: Customer loyalty, retail banking, IT in banks, customer satisfaction, bank performance

The Fundamental Challenge: Human and Organisational Factors in an ERP Implementation

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Abstract: Organisations encounter obstacles when implementing ERP systems. This paper intends to explore some of the problems that occur throughout the implementation of an ERP system. Using a combination of the work of Markus et al (2001) and Kim et al (2005), a framework is constructed of Human and Organisational and Technical problems in ERP Implementations during the project phase. Drawing on empirical evidences from a UK furniture manufacturer, this study then discusses and analyses each problem identified in the framework and its affect on the implementation of their ERP system. The findings of this paper reveal that the fundamental challenge of ERP implementation is not technology but organisational and human problems, which, if not properly comprehended and addressed, can lead to ERP failure. Understanding that organisational and human issues are extremely important will encourage practitioners to address these problems and succeed in their ERP system implementations.

Keywords: ERP systems, implementation, human and organisational problems, technical problems

Is ICT Enabled Price Transparency Solution to Quality HealthCare?

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Abstract: In the US, the health care industry currently stands at a crossroad. The key stakeholders are forging ahead with several models to try to contain the growth of healthcare cost and ensure quality of care. The growth of Consumer Driven Health Plans (CDHP), Pay-for-Performance, Health Savings Accounts (HSA's), and Centers for Medicare and Medicaid Services (CMS) payment incentives are all recent attempts in this direction. Regardless of which model reigns, the future will emphasize on interconnectivity and value, with the key stakeholders demanding price transparency for health care services. This may best be achieved utilizing Information and Communication Technology (ICT). ICT can play a more significant role in health care today and in the future by giving scalable price efficiencies and improving the dissemination of related quality information. This can make Price Transparency more palatable to the stakeholders and make inroads to help explain the true price for the service rendered. ICT will have significant impact on improving quality and accessibility of health care while controlling the price of health spending using health information technology. In this study, the relationship between the models mentioned above and ICT enabled price transparency is analyzed. The paper develops an integrative model that potentially will deliver quality healthcare through leveraging ICT while empowering stakeholders through price transparency.

Keywords: Price transparency, health care, information and communications, technology (ICT), quality

Outsourced Information Systems Failures in SMEs: A Multiple Case Study

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Abstract: Since the 1980s, a number of frameworks have been proposed for understanding the concept of information system (IS) failure. Two approaches to IS failures seem particularly important: the concept of Expectation Failure and the concept of Termination Failure. We argue that there is an extra dimension to the problem that is not covered by those descriptive models, which we call the Outsourced IS Failure (OISF). To explain the OISF we draw on agency theory, which views the problems that occur in outsourced environments as the results of three factors: goal differences, risk behaviour differences and information asymmetry. Although the (positivistic) agency theory has already been used to describe phenomena of failure in IT relations there is still a lack of empirical evidence.

This paper brings the results of the attempts of falsification of the agency theory in situations of OISF. A positivistic case study research was conducted based on multiple cases in SMEs. The choice for qualitative research is based on the accessibility of well documented secondary data in litigation files of failed IS projects. Eight cases of IS project failures subject to litigation were selected.

We conclude that the agency theory has strong prediction and explanation power for OISF. However some adjustments are needed to the agency theory. The theory seems to work in two ways, opportunistic behaviour is also observed on the side of the principal. The findings indicate that lack of trust is a prominent determinant for failure.

Keywords: IS outsourcing, SMEs, IS failures, principal agent theory, organisational & personal trust

The Application of Benefits Realisation Practices to the Development of a Clinical Trials Support System

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"We know what we do, and often we know why we do what we do; but what we don't know is what we do does." -Michel Foucault

Abstract: The aim of our research project, described in this paper, was to develop a purpose-built clinical trials support system [CTSS], which would be sufficiently comprehensive, integrated and flexible, so as to support the vast majority of research studies that were to be managed and conducted by one UK-based health authority. Whilst at the start of this project, it was reasonably clear what major clinical activities the system would need to be able to support, it was less clear what benefits the system should be expected to deliver, nor how these benefits were related to specific aspects of the system's functionality. Moreover, whilst there was a recognition that the introduction of the CTSS would engender fairly significant organisational changes, it was less easy to articulate the nature of the changes, nor how they might ultimately relate to the realisation of benefits. Consequently, it was agreed at the project's outset that an explicit benefits' realisation approach should be integrated into the system's development activity. The aims of this paper are threefold: 1) to describe the CTSS project, paying particular attention to why it justified the inclusion of a benefits realisation approach; 2) to provide a description of, and justification for, the benefits management approach adopted; 3) to provide a provisional assessment of the effectiveness of this approach. In addressing these objectives, it was envisaged that our paper would make an important contribution to the literature by providing one of the few first-hand accounts of the conduct of benefits' management practices, and certainly the first in the context of clinical trials support systems. Moreover, the paper provides new insights into the integration of benefits realisation and structured development tools and practices: we describe how the benefits dependency network has been successfully related to use case diagrams.

Keywords: Benefits realisation, software development, clinical trials, NHS

Categorization and Overview of IT Evaluation Perspectives - A Literature Review

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Abstract: Despite the fact that IT investment evaluation has been a well established research area for many years, researchers still struggle to gain a common understanding of how to define and evaluate such evaluation. In particular, the existing literature outlines different views on what perspectives and criteria should guide the evaluation process. This paper provides a literature review of different perspectives for evaluating IT investments in organizations. In doing so, it identifies different evaluation perspectives, each having their own criteria and rationale. The identified perspectives are strategic match, impact on organization, impact on surroundings, stakeholders view, IT specific perspective, benefits, costs, risks & uncertainty, and project organizing. In view of a fragmented research field, the paper contributes a comprehensive overview of the evaluation literature focused on IT investments in organizations with regard to perspectives and their criteria. Implications for research and practice are presented.

Keywords: IT evaluation, IT investments, organization, management, perspectives

Evaluating and Managing Risk in IT Projects

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Abstract: Projects have an unenviable reputation of their high failure rate. The rate of failure of IT projects have not changed significantly over the span of time and it is found survey after survey that the rate of failure of IT projects hovers around 40-50%. Successful management of IT projects, in terms of meeting cost, time and functionality targets, continues to be an elusive achievement. Risk management, and in particular, the failure to manage uncertainties that typically surrounds an IT project, has been consistently identified as a critical area of IT project management. The foregoing discussion provides the motivating factors behind the writing of this paper with an objective of:

Providing a methodology for dealing with IT-related issues and risks

Providing an approach for identifying and tracking issues and risks

This research paper will provide support for the conjecture that a practical alternative to traditional formal prescriptions may be needed if project managers have to succeed in managing highly uncertain situations with limited resources.

Keywords: IT Project management risk management strategies problem resolution strategies process modelling

From CIO to CKO: A Quantum Leap in Leadership Skills

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Abstract: This essay contends that in the short term, CIOs need to move from managing IT infrastructure to managing IT value. It also proposes that, in order to be effective as an IT value manager, the new CIO needs to be able to influence the Board and bridge the gap between the business and technology, and for this to happen a significant shift in the CIO's competences is required.

The essay then puts forward the view that in the mid- to long-term, even IT value management will become invisible to the organization. What will really become critical for success is managing knowledge, but in the majority of today's organizations there is nobody taking a holistic view of how the organization should manage this increasingly valuable asset. The paper sheds some light on how knowledge can be managed in the organization, and concludes that the forward-looking CIO is in a privileged position to mutate into the role of Chief Knowledge Officer (CKO). But again, a new set of competences will be required for the job.

Keywords: IT value management; knowledge management; cio competences; leadership skills

Evaluation of e-Learning at Work - Methodological Aspects

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Abstract: An internally developed web-based course (Diabas) at the County Administration of Sweden was analysed. The course focussed on dealing with official records in the organisation. The evaluation model MOA-L was used as a theoretical frame of reference and the use of the model was process-oriented. The current work situation was studied before the course. A questionnaire was distributed to the first hundred learners after they had passed the course. A phone interview was then made a month after they had passed the course. The main focus of the evaluation was the usefulness of the course, for the learners' ordinary work. The respondents were more positive to the usefulness of the course when they answered the questionnaire compared with the phone interviews a month later. They also thought it was easier to get time for the course, when they answered the questionnaire, compared with answers from phone interviews. Probable reasons for this discrepancy are discussed. Some conclusions of the study are that traditional ways of carrying out course evaluations immediately after a course has been passed may not be relevant for evaluation of internal courses at work. The study shows the risk of more positive judgements of the course when the evaluation was made immediately after the course had been passed. Instead a process-oriented evaluation is recommended, evaluating both the work situation before the course, the comprehension of the course immediately after the course has been passed, and also evaluation about a month after the course has been passed in order to examine the relevance of the course for the learners ordinary work. Other important aspects that could affect attitudes towards the course are whether the participation in the course is voluntary or cogent, and whether the contents of the course is properly adjusted to the pre-knowledge level of the student.

Key words: e-Learning, evaluation model, process-oriented evaluation, learning at work

Impact of IS/IT Investments on the Financial Performance of Portuguese top Companies

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Abstract: As with other forms of capital, companies are motivated to invest in IS/IT to increase their productivity, to gain an advantage over their competitors, and ultimately, to increase their profitability. IS/IT investments are seen as having an enormous potential impact on the competitive position of the firm, on its performance, and demand an active and motivated participation of several stakeholder groups. An important stream of research conducted all over the world has tried to understand these phenomena, called in the literature as IS business value field. Research has been conducted in particular in the USA, Canada, Australia, Japan and some of the most developed EU countries, at three levels: country, sector and firm level.

We found a gap in the literature, addressing small and less developed economies that allocate fewer resources in IS/IT, like Portugal. No empirical work has been done to date in order to understand the impact of IS/IT on financial performance of Portuguese firms.

The aim of this paper is to fill a gap identified in the literature and shed light on the Portuguese situation concerning the impact of IS/IT on the financial performance of Portuguese companies. Using data from two surveys conducted by the Portuguese National Institute of Statistics (INE), Inquiry to the use of IS/IT by Portuguese companies (IUTIC) and the Inquiry Harmonized to (Portuguese) companies (accounting data), this study relates (using regression analysis) the amounts spent on IS/IT with the financial performance indicator Returns on Equity of Portuguese companies with more than 250 employees. Empirically, we test the impact of IS/IT expenditure on firm performance on a sample of Portuguese large companies. Our results, based on firm-level data on IS/IT expenditure and financial performance as measured by return on equity (1186 observations) for the years of 2003 and 2004, exhibit a negative impact of IT expenditure on firm performance, in line with “productivity paradox” claimants.

Keywords: IS/IT investments, productivity paradox, firm performance, productivity, return on equity

Evaluating IT Benefits Through Modeling the Organization

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Abstract: Large information technology (IT) investments in an industrial context are made with the incentive that they will lead to monetary benefits for the organization. Earlier research has shown that these benefits are not easy to measure when evaluating the investment, and they may not always have been realized by the time the evaluation is taking place. Organizations have often identified business specific, intermediary goals that are not quantifiable in them selves but believed to lead to monetary benefits eventually. These qualitative business goals, such as higher employee satisfaction or better information for decision making etc, need to be part of the evaluation of IT to give a more complete evaluation of the IT investment.

This paper suggests a quantitative method of evaluating IT investments by modeling the organizational changes new IT systems bring and the intermediary, business specific goals that are affected. The modeling language is based on a metamodel. The constructs of the metamodel and how to use them for tracing changes in business value will be explained. Since different kind of organizations have different goals and needs, the modeling language has to be adapted to suit the specific organization and its goals, and this paper presents how it could be defined for one organization. The method has been used to evaluate an IT investment to support the maintenance management process at a Swedish nuclear power plant. The general method and modeling language used for modeling are presented, and then adjusted to suit the organization of interest.

Keywords: Evaluating model, IT/IS investment, business value, modeling language, organizational impact

ICT Adoption and Use in UK SMEs

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Abstract: We present the results of a survey of around 400 small and medium sized enterprises (SMEs) from the southwest London and Thames Valley region of England, on their adoption and use of information and communications technology (ICT). The SMEs were drawn from four economically significant sectors in the region: food processing, transport and logistics, media and Internet services. Our objectives were the following: to explore ICT adoption and use patterns by SMEs; to identify factors enabling or inhibiting the successful adoption and use of ICT; and to explore the effectiveness of government policy mechanisms at national and regional levels.

Our main result indicates a generally favourable attitude to ICT amongst the SMEs surveyed, but also suggests a failure to recognise ICT's strategic potential: the majority of ICT applications implemented are at a strictly operational level. SMEs are also generally distrustful of ICT consultants and fear being 'trapped' by spiralling costs associated with 'wasteful' ICT expenditure. The most surprising result was the overwhelming ignorance of regional, national and European Union (EU) wide policy initiatives to support SMEs. This strikes at the very heart of EU and UK policy that have identified SMEs as requiring support mechanisms. Our findings from one of the UK's most productive regions therefore have important implications for policy aimed at ICT adoption and use by SMEs.

Keywords: Information and communications technology (ICT), small and medium sized enterprises (SMEs), adoption, policy

Selection Criteria for Enterprise Architecture Methods

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Abstract: This study proposes key selection criteria for enterprise architecture methods based on a case study of the Finnish National Enterprise Architecture (NEA). Enterprise Architecture (EA) planning is increasingly important as ICT is today a strategic business enabler. Enterprise Architecture is a managerial tool to align ICT with business development and a communication tool to ensure commitment and to prepare for organizational change. A multitude of EA methods have been proposed and some of them have also been adopted in practice. However, no market leaders or standard EA methods have emerged. The approaches of different EA methods vary, and their support for EA planning varies accordingly. Therefore, the EA method selection has substantial consequences for the organization. Evaluating and selecting the best suitable method is the highly important first step in EA planning initiatives. This case study collects evidence from a large EA method development project within a government ICT management program for the entire organization of the Finnish Government. The conducted requirements analysis for the EA method in this project as well as previous studies in EA and method development indicate that the most important criteria for EA method selection are related to the fundamental role of EA as a communication tool. Complexity and abstraction level of an EA method should strongly correlate with the EA experience of the future EA method users. We assume that these key requirements are common to most organizations, because they are related to the main purpose of the EA method and framework: communication. This study is based only on one, but a large organization with several units representing different domains. In some requirement areas, different organizations likely have divergent requirements. An important future research goal is to construct a general-purpose set of criteria for EA method selection and its validation in various business fields.

Keywords: Enterprise architecture, method, method selection, evaluation, e-Government

Analysis of the Current State of Enterprise Architecture Evaluation Methods and Practices

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Abstract: Today, more and more organizations adopt enterprise architecture (EA) processes to cope with the changing environment and to improve their performance and competitiveness. However, the evaluation of EA regarding its quality and benefits is rather difficult. The review of previous research resulted in the recognition that there is no methodology for enabling the EA evaluation by considering the whole EA. Therefore, this paper presents and analyses the current state of methods and practices to evaluate EA from different viewpoints. The introduced approaches focus especially on performing an assessment mainly based on architectural descriptions. All methods, standards, and measures address EA related concerns and evaluation needs regarding business, information, systems, and technology. All of the presented techniques have been developed or tested and validated in a practical environment.

Keywords: Enterprise architecture evaluation, evaluation methods, analysis

Electronic Health Records in Developing Countries, Integrating with Mobile Technology and Legacy Systems for Community Based Health Workers: Organisational and End-Users' Issues

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Abstract: The World Health Organisation (WHO) in 2004 called for the use of electronic health record (EHR) systems for the scaling of HIV/AIDS management of United Nations' Millennium Development Goals related diseases. The use of EHR as a means of building the capacity of health workers and the integration of EHR with the legacy health management information system was proposed as a way of building a holistic information system. To achieve this, the provision of internet connectivity and computers in different health settings was recommended. Community Based Health Workers (CBHWs), as important actors in the provision of essential primary healthcare in developing countries, require access to their patients' medical records in order to provide quality and effective health care. Therefore, the distribution of EHR integrated with legacy systems through mobile/wireless information and communication technologies could provide means of providing remote and located access to CBHWs. The use of mobile technologies for extending enterprise knowledge to this group of health workers for supporting their daily activities is recently proposed by the WHO. This paper will build on this proposition through a case study evaluation of a failed implementation and use of a mobile EHR system from a developing country. A major finding of this paper is the need to carry out pre-implementation evaluation before the introduction of integrated mobile EHR with CBHWs in developing countries.

Keywords: End-users & organisational issues, IS implementation and use integrated mobile EHR, developing countries, community based health workers, legacy health information systems

An Exploratory Investigation into Internet Users' Perception Regarding the Data Privacy Policies of Virtual Companies Operating in Ireland

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Abstract: Virtual companies (i.e. a company that does not have a physical footprint and exists only on-line) have introduced new elements of risk and trust criteria for Internet users, and consumer concerns surrounding this medium have not been fully investigated to date. This paper examines the privacy concerns that the consumer has when providing personal details when transacting with virtual companies. The paper goes on to explore consumer awareness of virtual company's privacy policies and seal programmes that were designed to address these concerns. The key objective is to: identify and analyse the concerns of the Irish population in relation to privacy when purchasing from virtual firms.

The researchers have taken a quantitative approach to the research, having developed a survey questionnaire for the purposes of eliciting consumer views relating to privacy concerns when purchasing from virtual firms in the Irish context. A comprehensive literature review preceded the research instrument development, while the pilot study consisted of conducting the face-to-face survey with four demographically dispersed respondents, followed by a short interview in each case. The purpose of this exploratory phase of the research project was to provide for refinement of the survey instrument in the context of the literature, in preparation for a larger survey to be conducted throughout Ireland's South East region.

Preliminary research results suggest that privacy concerns are high, but conversely, that there is little awareness of privacy policies or seal programmes among Irish consumers. Notably, consumers are unlikely to have read a virtual organisation's privacy policy despite identified concerns, and this finding is consistent among all pilot participants. Based on the pilot study findings, the survey instrument has been refined to allow for objective collection of data in the main research project, and statistical analysis to give meaning to the results.

Keywords: Online, consumer, privacy policy, virtual firm

Evaluation of Internet Banking Adoption and Diffusion in Chile

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Abstract: Some Chilean banks have been put in the top 30 as the best banking web sites in the Americas in 2006, and, Santiago Chamber documents their online banking activity as over one million account holders holding an account and password for online banking. The reality however is that the actual online banking is not studied enough to indicate if there is any activity beyond the usual checking of balances and transfers between accounts. This study, through a survey questionnaire to 250 MBA students university in Chile, found that the adoption of Internet banking is slow yet steady. Although these responses are a little biased, most of the respondents indicated their knowledge of the value provided by Internet banking and are not really persuaded by their peers and/or community.

Keywords: Evaluation of online, banking adoption in Chile, internet banking, adoption and diffusion in Chile, internet banking, online banking, ict adoption and diffusion in Chile

Measuring the Information Society: An Explorative Study of Existing Tools

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Abstract: The information society (IS) is a concept (sometimes controversial) whose existence has been championed as a development enabler. This has resulted in several initiatives geared towards policy making, strategy, and implementation of Information and Communication Technologies (ICT) both in the developing and developed countries. These initiatives led to the formulation of various information society assessment tools at different levels as assessment is accepted as an important guide to more effective policy, strategy and further implementation of ICT. While the overall concept of measurement as a basis of evaluating and modifying policy and strategy is correct, the objectivity, relevance, and sufficiency of the tools as applied in different contexts is often questionable. In this paper, an explorative study of the information society theories and some of the existing assessment tools at both macro and micro-levels is given. The analysis involved identifying the motivation - the purpose for which the tool was developed; assessment features - what the tool measures; temporal concept - stage of ICT diffusion the tool measures; the approach to tool development; and the approach to measurement - how is it measured. According to our findings, a typical assessment exercise focuses on the technology/infrastructure, its increase in terms of availability, adoption, and use, and is descriptive in nature. Information society assessment is further challenged by the dynamic and complex nature of the field, data and change measure constraints. We propose that policy making and further implementation would benefit from and be better advised by measures that focus on the phenomenon (society) to which ICT is relevantly applied (i.e. within context); identifying change attributed to the ICT and depending on theory as their basis of development.

Keywords: information society, assessment, development, policy, ICT, ICT4D

How do the Healthcare Information Systems (HIS) Help: A Literature Review

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Abstract: Different forms of healthcare information systems have emerged during the past two decades. As healthcare services are increasingly designed as in process-based organizations, also enterprise resource planning (ERP) systems are moving into modern hospitals. Although there is a lot of data of the benefits of ERP systems in production industry, very limited evidence exists of ERP's role in healthcare. We present an analysis of literature on the benefits of healthcare information systems (HIS) and enterprise resource planning (ERP) systems in healthcare.

The Medline, CINAHL, Inspec and Emerald databases and the Cochrane Library were searched, covering the period from 2000 to January 2007. Studies were included if they concerned hospital or healthcare information systems, enterprise resource planning or other information systems integrated to healthcare. Inductive approach was adopted for the analysis of the literature. The study was conducted using a metasummary technique for qualitative research.

Altogether 14 articles out of 647 articles met the inclusion criteria and were studied for this paper. The 647 articles were first analyzed based on the titles, then on the abstracts and finally based on the full texts. On every phase a set of articles were rejected and finally 14 articles were accepted for deeper analysis. All of the reviewed studies were case studies. The studies reviewed showed many benefits of HIS and ERP to healthcare operations and processes. Eight major classes of benefits were identified. These were "Better data", "Higher quality of information", "Improved communication", "More controllable resource allocation", "Process improvements", "Financial benefits", "Better decision making" and "Better patient care". A detailed analysis of each class is presented.

Keywords: Healthcare, information systems, systematic review, benefits

Key competences for Future Healthcare Information System (HIS) Developers: A Case Study

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Abstract: Healthcare is entering the Information Society. Healthcare is already one of the most information-intensive sectors of European economies and can greatly profit from recent advances in information and communications technology. It is evident that the use of modern information and communication technology offers tremendous opportunities to improve healthcare. There is also a great potential for rapid and sustained growth in the sector.

Health Information Systems are intended to improve the functioning of health professionals and organizations in managing health and delivering healthcare. However, for systematically processing data, information and knowledge in medicine and in healthcare, healthcare professionals who are well-trained in medical informatics or health informatics are needed. Normal IS development skills are a necessity, but thereafter the knowledge of the healthcare framework is at least as important. There is a need for health and medical informatics specialists.

We at Turku University of Applied Sciences wanted to focus part of our IT engineering education towards this direction. Therefore a curriculum development project was started in autumn 2005. The purpose of the project was to define the key competences a future HIS developer should command. We interviewed representatives of a group of companies and public healthcare organizations. In addition, we had a group of local university professors acting as a steering group and commenting and guiding our work. Furthermore, the recommendations of International Medical Informatics Association (IMIA) on Education in Health and Medical Informatics provided us support and guidelines.

The results show that two key competences for a HIS focused IT engineer can be identified in addition to the general IT engineers' competences. These two key competences are healthcare process knowledge and HIS design and development knowledge.

The education fulfilling these requirements will start in autumn 2007.

Keywords: Healthcare information system, developer, competences, case study

Evaluating Usage of CSCW Environments for Assuring Effective Collaboration on Interregional Projects

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Abstract: The term intranet refers to a private computer network that uses Internet protocols, network connectivity, and possibly the public telecommunication system to securely share information or operations among users. Sometimes the term refers only to the most visible service, the internal website. Additionally, the term computer supported cooperative work (CSCW) addresses "how collaborative activities and their coordination can be supported by means of computer systems." (WIKIPEDIA, 2007). CSCW can be supported from internal website type intranets. Spread collaborating groups are using closed www environments with several collaboration supporting functionalities (file sharing, communication, forum, tasks etc) in order to coordinate their work. This form of online collaboration is highly important for projects involving several types of actors from various regions and countries (interregional collaboration projects). These projects are highly important especially for the case of European Union (EU) where the collaborative spirit between structures coming from different countries has to be supported to assure cohesion (a very important and basic goal for the EC integration). In almost all cases of such projects, light versions of CSCW environments are used in order to support and enhance effective collaboration. With the presented work we examine the case of seven specific interregional European projects and the use of Intranet CSCW environments by their consortia. We present an evaluation of the Intranets usage based on several factors and metrics: functionalities provided, projects and partners' type, members of the system, files sharing, messages exchange, coordinator usage statistics etc. Scope of this work is to provide results, conclusions and suggestions on how CSCW Intranet environments have to be organized for effective application on Interregional collaboration projects, and to introduce an easily customizable and augmentable model for inspection.

Keywords: Intranets, computer supported cooperative work, interregional collaboration projects, metrics

Interpretative IS Evaluation: In Search for Results and Uses

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Abstract: One major reason for doing evaluations of information systems is to take actions based on the results of the evaluation. In order to make better use of interpretative evaluation processes in practice we need to understand what kinds of results such evaluations produces and the “mechanisms” that produces these results. We have developed, applied and studied an interpretative method for IS evaluation. In the paper we report the case of a performed action research study that has comprised an IS evaluation. Through this action research we have transformed the theoretical principles of the interpretative approach into a useful evaluation methodology in practice. The main emphasis in this study is on the results and the intended uses. We make a brief theoretical overview of interpretative principles for IS evaluation and of the research on evaluation use from the field of evaluation theory and represent a framework for analysing influences from evaluation efforts. We use this framework to analyse and identify the results and uses of the performed evaluation in order to shed light on what kinds of results that interpretative evaluation may offer. We experienced the influence framework useful for locating and understanding the variety of results from interpretative evaluation processes. We conclude with a model depicting results and uses from interpretive IS evaluation.

Keywords: IS evaluation, evaluation results, evaluation use, interpretative evaluation methodology

Evaluating Electronic Service Quality: a Transaction Process Based Evaluation Model

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Abstract: With the rapid growth of the Internet and the globalization of the market, most enterprises are trying to attract and win customers in the highly competitive electronic market. Best practice exemplars suggest that e-Service plays a critical role in e-marketing, which wins customers for enterprises through the Internet. This paper addresses the issue how to evaluate web service in the electronic marketplace. We draw on the e-Service quality perspective to suggest that enterprises that develop good content service and functional service in the transaction process can win more customers in the electronic market. In this study an e-Service quality evaluation model is conceptualized based on the literature review of the dimensions of e-Service quality. Our study suggests that the service quality of both content service and functional service in e-Service are important for enterprises to attract customers in the electronic market. In this study the evaluation process is based on customers' online purchasing process. It illustrates that different dimensions of e-Service quality are of different importance in different purchasing phrases. Furthermore it is implied in this study that good content service quality and function service quality can enable customers to get a good psychological satisfaction, which is vital for customers to make the decision to purchase products or services online, and to establish trust and loyalty to service providers.

Key words: Electronic service, service quality, evaluation, transaction process

User Evaluation of Multidimensional Data Visualization Techniques for Financial Benchmarking

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Abstract: In this paper, we investigate the use of information visualization techniques for getting insight into multidimensional financial data. In particular, we focus on exploring different multidimensional data visualization techniques with respect to their effectiveness in solving a financial problem, namely financial competitor benchmarking. Financial competitor benchmarking is concerned with comparing the financial performance of different companies competing in the same market, industry, country or region. We investigate the extent to which different multidimensional visualization techniques are effective in revealing interesting patterns in financial performance data. For this purpose, we conducted a user evaluation study in which nine multidimensional data visualization techniques were assessed. The assessment concerns the extent to which users of these techniques are capable of discovering interesting patterns in multidimensional financial data, patterns associated with the problem of financial benchmarking. These patterns are identified as outlier detection, clustering, cluster description, class description and data comparison. The visualization techniques under analysis are: multiple line graphs, permutation matrix, survey plot, scatter plot matrix, parallel coordinates, treemap, principal components analysis, Sammon's mapping and the Self-Organizing Maps. The evaluation method consists in questionnaire-based data collection and analysis. We obtained answers from 12 students who agreed upon participating in this study. The evaluation we have conducted is useful especially in the early stage of the development of a visualization system, because it helps in the process of selection of most appropriate techniques for solving certain tasks.

Keywords: User evaluation, multidimensional data visualization, financial data visualization

Determinants of Information Technology Diffusion: A Study at the Firm Level for Portugal

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Abstract: Recently, many studies have shown that IT played a major role in the resurgence in the growth of US output and productivity after 1995. Some studies for European countries also confirm this idea that IT and productivity are strongly related. The contribution of IT to economic growth can only be realized when and if these technologies are widely diffused and used. Within this context, understanding the factors affecting the decision to adopt and the extent of IT use by adopters is crucial not only for applied economists, but also to creators and producers of such technologies. Using a data set for Portuguese firms, our estimation results suggest that the significant drivers of intra firm diffusion are: firm size, workers skills, technological capacities and outsourcing partner usage.

Keywords: Information technologies, diffusion, adoption, cluster analysis, probit model

An Investigation into the Current it Legislation Affecting Small Health Care Organisations with Respect to the Management of Information

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Abstract: The aim of this study is to investigate the current IT (Information Technology) legislation with respect to the secure management of information, and its application by small health care organisations. Small healthcare organisations are a sub-category of small and medium sized enterprises (SMEs).

The research adopted a hybrid positivist and interpretivist research philosophy, a deductive approach, a hybrid survey and case study research strategy, and cross sectional time horizon. The research methods employed are questionnaires, semi-structured interview-using census, sampling and purposive samples.

The findings of the research identified that the majority of small health care organisations are not fully adhering to Information Management legislation. Although many aspects of the legislation are adhered to through common best practice, the key issues identified are the lack of existence of formal processes for adhering to aspects of the legislation, training for employees to increase the awareness of an organisations legislative requirements and senior management involvement.

The conclusions drawn from the research identified that small health care organisations are struggling to fully adopt Information Management legislation, in these organisations Information plays a vital role in their ability to operate, therefore its secure management is a vital concern for their prosperity and continual operation. Small health care organisations need to address the issue of adherence to Information Management legislation in order to fulfil the public's wish for privacy and to ensure they operate in accordance with the law.

Keywords: SMEs, IT legislation, information management, dental practices, small health care Oorganisations

Business and IT Alignment in Multi Business Companies

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Abstract: Aligning IT to business needs is still one of the most important challenges for many organizations. In a recent survey amongst European IT managers, 78% indicate that their IT is not aligned with business strategy. Another recent survey shows similar results. The message of Business & IT Alignment is logical and undisputed. But if this message is so clear, how can practice be so difficult? The practice of aligning IT to business needs becomes even more challenging in case the 'business' can be classified as that of a multi-business-company (MBC). In a MBC IT has to serve different business divisions with different businesses. These business differ in business characteristics, business cycles, market growth, market typology, etc. and therefore differed in their business needs. To explore the practice of BIA in MBCs a focused discussion group of IT managers and CIOs was formed. In total 18 participants from various industries joined the discussion in three separate groups. The discussions were aimed at exploring the following questions.

- Which issues are faced in aligning IT with business requirements in a MBC?
- Which actions are taken to align IT with business requirements in a MBC?

The input provided by the participants of the discussions made clear that the practical actions of aligning IT to business differ from company to company. In order to understand these differences, the paper explores the parenting theory of the role and added value of the corporate center in these companies. The Business & IT Alignment practices are matched with the three MBC management styles provided by the parenting theory.

Keywords: Business & IT alignment, multi-business-companies, corporate center, parenting theory

CRM and SMEs – An Embryotic Research Field of Increasing Relevance

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Abstract: Customer Relationship Management (CRM) is gaining increased attention in marketing thought. The purpose of this paper is to map the state of art of CRM research that focus on conditions in SMEs. A literature review is carried out with this purpose. It is found that CRM in SMEs is an embryotic research field, but it is also foreseen that it is a research field of increasing relevance, and that the application of the CRM concept in SMEs must take the particular features of SMEs in account. A number of such SME features are remarked upon in the CRM literature, and even though the articles reviewed are not addressing what is considered “proper” CRM, it is concluded that they are features that are of importance also to the application of CRM policies and practices in SMEs.

Keywords: Customer relationship management, small and medium enterprises, literature review

CHEVAL: Chur Evaluation Laboratory

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Abstract: Incorporating novel approaches like visual components, semantic web ideas or Web 2.0 concepts into information retrieval systems poses new challenges for their systematic evaluation. Currently, the development of valid evaluation settings cannot keep up with the development of new search engines and innovative information retrieval concepts. Therefore, the Swiss Institute for Information Research (SII), is currently developing a testbed called CHEVAL (Chur Evaluation Laboratory) to tackle this problem. The vision of CHEVAL is to design an integrated, multi-level and multi-methodological web-based system and framework to support different kinds of evaluation types (e.g. usability tests, IR efficiency measurement, benchmarking studies etc.) of several types of information retrieval systems. In the context of CHEVAL, an evaluation can have multiple dimensions regarding the type of the evaluation (long-term or short-term test phase, comparative or non-comparative evaluation, field or laboratory test environment) and the methods used for the evaluation, which can either be from IR efficiency measurement or usability testing as well as a combination of both. The paper will give an overview of some well-known and widely accepted evaluation initiatives. This also includes background information about the history of these initiatives. Furthermore the strengths and weaknesses of the described evaluation initiatives will be presented and discussed. Based on the deficiencies of current approaches for evaluating information retrieval systems with visual or semantic components the vision and the goals of the Chur Evaluation Laboratory will be explained. Following, the architecture of the testbed will be introduced. An example will illustrate how the system is intended to be used and what advantages CHEVAL will give to evaluators of information retrieval systems. Finally, the paper will present the success factors and a short roadmap for the further development of the Chur Evaluation Laboratory.

Keywords: Evaluation, information retrieval systems, system-supported evaluation, usability testing

Information Sharing Before, During, and After Emergency Responses

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Abstract: Emergency response to any man-made or natural disasters involves different organizations – such as fire & rescue service, emergency medical services, law enforcement (police forces), responders from other governmental and non-governmental organizations. Information sharing and management among these responding organizations is essential to success of the emergency responses. Information sharing among different organizations cannot occur overnight and must be in place before a disaster occurs, be able to be easily used during the disaster and be maintained after the disaster. Information sharing requirements and features are presented before an information sharing infrastructure is proposed in this paper. It is expected to enable the response organizations to efficiently communicate with each other in the charged and high-pressure atmosphere of an on-going disaster response. On-site information collection is suggested to be carried out through wireless sensor networks and RFID. Our on-going project SafetyNET is described to illustrate the implementation of the information sharing system.

Keywords: Emergency response, information sharing, wireless sensor network, RFID, internet

Enterprise Architecture Compliance: The Viewpoint of Evaluation

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Abstract: Enterprise Architecture (EA) provides a holistic view of entire organization, including various viewpoints such as business, information, systems and technology. It is of interest for academics and practitioners alike. It has been suggested that EA is an approach for controlling the complexity and constant changes in the organization and its business environment, and assisting organizations in realizing a multitude of positive business impacts. As the organization transforms from the current EA state towards the improved target state through a set of projects, at least the compliance between the projects and EA should be examined to assure that the organization is moving towards the desired direction. The concept of EA compliance has not been a target of academic research, but practitioners have addressed the concept more extensively in the form of compliance evaluation method descriptions, checklists, white papers and standards. The concept has especially been addressed in the US Government. Nonetheless, the area of research is fragmented, lacking a comprehensive perception of EA compliance and its evaluation, stressing only the regulatory and corporate governance connotation of the term, and focusing mainly on the EA compliance of projects. However, we consider this perception to be too narrow, and want to study if there are any other aspects that should be addressed. Therefore, in this paper, we address the concept more extensively, aiming to develop a broader, unbiased understanding of the concept of EA compliance. Particularly, based on a literature review and a focus group interview of EA practitioners from both information technology (IT) user and service provider organizations, we describe the various possible perspectives of EA compliance, and discuss various areas of its evaluation. Especially, EA compliance evaluation goals, evaluation targets and evaluators are addressed. This extensive view to EA compliance enables organizations to assure that the transition towards the target state is controlled more systematically, for example by guiding investments, development projects, and their actual impacts to comply with EA.

Keywords: Enterprise architecture (EA), enterprise architecture work, compliance, evaluation