6th European Conference on Knowledge Management

University of Limerick, Ireland
8-9 September 2005

Edited by

Dr Dan Remenyi
Trinity College Dublin, Ireland
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Preface

The 6th European Conference on Knowledge Management (ECKM 2005) is being held this year at the University of Limerick, Ireland. ECKM has once again attracted another set of most interesting research papers from 34 different countries. Furthermore, the quality of these papers continues to improve.

This year the conference is very pleased to have attracted two well known figures in the Knowledge Management community to deliver keynote addresses. The first will be presented by Bernard Marr from Cranfield University, who will speak on the topic of Perspectives on Intellectual Capital - the challenges of measuring and managing this critical value driver. The second by Larry Prusak, who is a leading thinker and prolific author in the KM field, is on the topic of The past, present and future of Knowledge Management.

The conference has also developed two specialist mini-tracks. One of these is on the topic of IC and KM - the Macro Dimension and is being led by José Viedma Marti from Barcelona. This mini-track addresses issues related to smart cities and regions. The second is on the topic of Measuring and Evaluating IC and Knowledge Assets and is led by Bernard Marr. This mini-track focuses on the key issue of evaluation.

It has been a very enjoyable and enlightening experience to have been involved in the preparation of these proceedings and I wish all the researchers and authors concerned well in furthering their research in their chosen topics.

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School of Systems and Data Studies
Trinity College Dublin
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Conference Chair: Fergal McGrath, University of Limerick, Ireland
Programme Chair: Dan Remenyi, Trinity College Dublin, Ireland
Mini-track Chairs:
Measuring and Evaluating IC and Knowledge Assets - Bernard Marr, Cranfield School of Management, UK
IC and KM, The macro dimension - Jose Viedma Marti, Polytechnic University of Catalonia, Spain

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Conference Committee:
The conference programme committee consists of key people in the Knowledge Management and IS community:

Gabriela Avram (Centre de Recherche Public, Luxembourg), Joan Ballantine (Queens University Belfast, UK), Sue Balint (University of Paisley, Scotland), Frank Bannister (Trinity College Dublin, Ireland), Diane Benjamin (National Health Service, UK), Egon Berghout (Groningen University, Netherlands), Heather Bircham-Connolly (University of Waikato, New Zealand), Janis Briedis (Riga Business School, Latvia), Ann Brown, (CASS Business School, London, UK), John Byrne (RMIT, Melbourne, Australia), Sven Carlsson (Jönköping International Business School, Sweden), Daniele Chauvel (Conservatoire des Arts et Metiers, Paris, France), Reet Cronk (Harding University, USA), Enrique Dans (Instituto de Empresa, Spain), Farhad Daneshgar (University of New South Wales, Australia), John Deary (Higher Colleges of Technology, Dubai), Charles Despres (Conservatoire des Arts et Metiers, Paris, France), John Edwards (Aston University, UK), Jamal El Den (American University of Beirut, Lebanon), Tiit Elenurm (Estonian Business School), Mercy Escalante (Sao Paulo University, Brazil), Andras Gabor (Budapest University of Economic Sciences and Public Administration, Hungary), Sean Gadman (International Business School, Isle of Man, UK), Andrew Goh (University of South Australia), David Gurteen (Gurteen Associates, UK), Khalid Hafeez (University of Bradford, UK), Matthew Hall (Aston University, UK), Meliha Handzic (Sarajevo School of Science and Technology, Croatia), Lars Bo Henriksen
Biographies of Conference Chairs, Programme Chair, Mini-track Chairs and Keynote Speaker

**Fergal Mcgrath** is senior lecturer in Information Management at the Kemmy Business School, University of Limerick. A graduate electronic engineer, he worked in Australia and the UK and went on to establish an engineering design company, Seagull Electronics Ltd. Completing an MBA in 1989 he pursued an academic career in the area of Information and Knowledge Management. Fergal completed a doctorate in 2000 at the Henley Management College/Brunel University in the UK. His research interests are in the application of Institution Economics to Information and Knowledge Management. He heads up the AIB Research Centre for Information and Knowledge Management, which researches organisational strategies in relation to the Information Knowledge resource. He is also head of the Department of Management and Marketing, University of Limerick.

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**Bernard Marr** is a Research Fellow in the Centre for Business Performance at Cranfield School of Management and a Visiting Professor at the University of Basilicata, Italy. Prior to joining Cranfield in 1999 he held a research position at the Judge Institute of Management Studies at Cambridge University. Currently, Bernard is chairman of the PMA intellectual capital group and heads various international research projects on strategic value creation and the measurement of intellectual capital. He has produced over 75 publications including books, reports, and articles on related topics such as balanced scorecards, strategy maps, intellectual capital, intangible assets, and performance management software applications. He is a member of editorial boards of many leading journals in the field and is a frequent keynote presenter at international conferences.
Jose M. Viedma is a Doctor of Industrial Engineering, a Graduate in Economics and Professor of Business Administration at the U.P.C., Polytechnic University of Catalonia in Barcelona, Spain. He teaches on the subject of knowledge management, intellectual capital management and organisational learning. He has held top executive positions in computer services and management consultancy firms. He is a regular speaker in International conferences and congresses on Knowledge and Intellectual Capital Management such as World Congress on Intellectual Capital and Innovation and European Conference on Knowledge Management. His current field of research and interest is focused on knowledge management and intellectual capital management and he has consulted and developed management frameworks and systems world wide on those matters.

Keynote Speaker: Larry Prusak is a researcher and consultant and was formerly the founder and Executive Director of IBM Institute for Knowledge Management (IKM). Larry has had extensive experience, within the U.S. and internationally, in helping organizations work with their information and knowledge resources. He has also consulted with many U.S. and overseas government agencies and international organizations (NGO’s). He currently teaches in the knowledge management executive education program at the Harvard Business School, and is a distinguished Scholar in Residence at Babson College, where he co-directs a knowledge research program.
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Gabriela Avram holds a PhD in Business Information Systems from the Academy of Economic Studies in Bucharest, Romania. Her thesis topic was the Evaluation of Information Systems. In 2003, she obtained an ERCIM post-doctoral fellowship that gave her the chance to join successively two different European research institutes: the Fraunhofer Institute of Experimental Software Engineering in Kaiserslautern, Germany, and the Centre de Recherche Public Henri Tudor in Luxembourg. During that period, her research topics were Knowledge Management and e-learning, with a special focus on communities of practice, the facilitation of online communities, and open source software development communities. In June 2005, she joined the Interaction Design Centre at the University of Limerick to work on a project dedicated to social, organizational and cultural aspects of globally distributed software development, under the supervision of Prof. Liam Bannon. Her current research focuses on Social Software and online communities facilitation. Her weblog named Coniecto (http://coniecto.blogspot.com) is mainly dedicated to her research topics.

Marco Anzelak studied mechanical engineering and computer science at the Universities of Graz and Klagenfurt. He has a degree in computer science from the University of Klagenfurt. In his Master thesis he developed a knowledge management system in a large Austrian company. He is currently employed as researcher at the department for business technologies, eBusiness (biztec) at the University of Klagenfurt. His research interests are: Knowledge management in manufacturing facilities, Content-, Document- and Knowledge management with WEB-Technologies, Knowledge Engineering.

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Marco Bettoni is an independent consultant and guest researcher with the Center for Organizational and Work Sciences of ETH Zürich focusing on knowledge-oriented cooperation. From 1977 to 2003 researcher, engineer and teacher with industrial and academic organizations in the domains of machine design,
engineering education, IT development, knowledge engineering and knowledge management.

**Heather Bircham-Connolly** is in her second year of her PhD at The University of Waikato, under the guidance of Jim Corner and Steve Bowden. Her area of research interest is knowledge sharing for decision making, with a focus on how responses to question of a certain structure influence a recipient’s attitude towards the knowledge they receive. At the same time as working on her thesis, Heather has been involved with teaching a number of courses in various departments within The Waikato Management School. She has also had the opportunity to represent the School in a number of business debates on Sustainability. Prior to undertaking her PhD, Heather was based in Australia as a business consultant, specialising in risk, audit and compliance management systems.

**Caroline De Brún** (née Papi) graduated from University of North London, in 1998, with an MA in Library and Information Studies. Her first professional role was as Assistant Librarian for Fair Mile Hospital Professional Library. In 2000, she was appointed Library Manager for Berkshire Health Informatics Shared Services, responsible for providing library services and search skills training to primary care staff, and for developing a knowledge management strategy for the organisation. In 2002, Caroline became the Primary Care Outreach Librarian for Oxfordshire. Caroline is currently working for the Department of Health National Knowledge Service developing the National Library for Health Specialist Library for Knowledge Management for the NHS.

**Sladjana Cabrilo** is Master of Science in Industrial Engineering and Management. She finished graduate studies, in 1996 at the University of Novi Sad. After graduation, she worked mostly on managerial positions. Wanting to improve her managerial career she registered to postgraduate studies at the University of Novi Sad, Department of Industrial Engineering and Management in 2002. She was promoted to Master of Science in 2005 with Master Thesis: “Assessing and Measuring Intellectual Capital”, thus becoming the pioneer in IC research in Serbia and Montenegro. Currently working as PR Director in Public Utility Company in Novi Sad and teaching assistant at the Faculty of Management Novi Sad. Her field of expertise is strategic management, with emphasis in knowledge management research.

**Nuria Calvo** is graduated in Business Administration and Psychology. She has worked in Andersen Consulting (now Accenture), Inditex and the Galician telecommunications company for more than ten years, involved in human resources projects in Spain and United States. Nuria is currently focused on knowledge management research, developing her professional activities in University of A Coruña.

**Annick Castiaux** is a Professor at the University of Namur. After a PhD in Physics, she was a consultant in KM during 5 years. Recently, she came back to the university to share her experience with students in management sciences and to initiate a research work concerning knowledge transfer phenomena.

**Dr. Benny C.F. Cheung** is an Associate Professor in the Department of Industrial and Systems Engineering of The Hong Kong Polytechnic University and an Adjunct
Professor of the Harbin Institute of Technology Shenzhen Graduate School. He is an active researcher with an emphasis on industry related and applied research. His research interests in knowledge management include knowledge management strategy, knowledge audit, taxonomy, intellectual capital management and artificial intelligence in KM.

Elena Chukhlantseva and Kaisa Hellström are PhD students at the Research Unit for Sociology of Education (RUSE), University of Turku. Elena is M.Soc.Sc in International and Comparative Education with research interests in knowledge work and strategic management. Kaisa is M.Phil in Plant Physiology and M.Soc.Sc in Sociology with research interests in knowledge production at the university-industry interface.

John S. Edwards is Professor of Operational Research and Systems, and Head of Academic Programmes at Aston Business School, Birmingham, UK. He has an MA in mathematics and a PhD degree from the University of Cambridge. His doctorate was in human resource planning models. His principal research interests now are in knowledge management, especially methods for the development of knowledge-based systems and decision support systems. He has published more than 40 research articles on these topics, and two books, *Building Knowledge-based Systems* and *Decision Making with Computers*. He is editor of the journal *Knowledge Management Research & Practice*.

Tiit Elenurm holds the professorship in entrepreneurship at the Estonian Business School. Ph. D. in 1980 for the dissertation “Management of the Process of Implementation of New Organizational Structures”. His vision is to develop synergy between management training, consulting and research activities. Research interests include knowledge management, change management and international transfer of management knowledge.

Scott Erickson is Associate Professor of Marketing and International Business in the School of Business at Ithaca College. He holds a PhD from Lehigh University, MIM from Thunderbird, MBA from Southern Methodist University, and BA from Haverford College. With Helen Rothberg, he published the book *From Knowledge to Intelligence: Creating Competitive Advantage in the Next Economy* (Elsevier Butterworth-Heinemann) in 2004. His research interests include intellectual capital/knowledge management and intellectual property. He consults regularly and worked with Proudfoot before entering academia.

Christina Evangelou is a PhD student at the IMIS Lab, University of Patras, Greece. Her thesis work builds around the integration of Collaborative Decision Making and Knowledge Management in contemporary organizations. Her research work involves Collaborative and Computer Mediated Decision Support Systems, Knowledge Management, Multicriteria Decision Aid, Ontologies, and XML Technologies. Since 2001, she holds a Mechanical Engineering and Aeronautics Diploma from the University of Patras.

Péter Fehér is a “Depozit” research fellow at Corvinus University of Budapest. He earned a diploma (MSc) in Economics in 2000, and defended his PhD thesis in 2005. He leads courses in the topics of Knowledge-, and Project Management, Management Information Systems. His current research areas are Knowledge
Management, especially the problems and difficulties of KM practices, but he is also participating in IT Service Management and organisation development projects.

**Andrea Fried** served as a knowledge and organization studies expert in research and lecture in the Chemnitz University of Technology’s Economics and Business Administration Department, Germany. She holds different lectureships e.g. at the University of Kwazulu-Natal (South Africa) and at the University of Basle (Switzerland). Andrea studied Business Administration at the University of Jena and got a doctoral scholarship of the Hans Böckler Foundation (both Germany).

**Waltraud Grillitsch** is project member of the knowledge management project group of the department for eBusiness/ Business Technologies (biztec) at the University of Klagenfurt. She is writing her Ph.D. Master thesis in the field of Knowledge Management in corporate networks and is studying journalism at the University of Klagenfurt. She is working in specific company projects in the region.

**Jörg Härtwig** is an academic member of the Institute of Computer Science at the University of Leipzig and has led a knowledge management research project for the last 3 years. His research interests are in business oriented knowledge and information management and enterprise content management systems. Since 2004 he is a PhD student and he works on his thesis on interoperable semantics between applications in enterprise’s environments.

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**Harri Laihonen** is a Ph. D. student and is currently part of a research group studying knowledge intensive services. Mr. Laihonen himself is studying knowledge flows in health care ecosystems. One of the main targets of the research program is to study Complex Adaptive System theories and their applicability to organisations.

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**Eni Mustafaraj** is a PhD student at the Department of Mathematics and Computer Science, University of Marburg, Germany. She holds a Diploma of Electrical Engineering from the Polytechnic University of Tirana. Her research work focuses on methods and techniques for building adaptive frameworks for problem solving and knowledge management.

**Dr. Juan G. Cegarra Navarro** is an Associated Professor of Business Administration of the Polytechnic University of Cartagena (Spain). His research is focused in Knowledge Management.

Fabricio Orellana studied business administration at graduate and postgraduate level in Ecuador and Germany. At present he attends a PhD program. Fabricio Orellana’s research has a strong qualitative and empirical focus. Some of his areas of expertise are change management, process management, controlling, audit systems, information systems, business development, and management consulting.

Abiodun Dominic Oyeniran received his Bachelors degree in Computer Science from the Federal University of Technology, Akure (FUTA), Nigeria in 1999 and is currently completing an MSc at Staffordshire University, UK. He has worked on various information systems projects, both in Nigeria and in the UK. His research interests include KM, KM systems, and cyberspace security. He is currently seeking a PhD position in any of these areas.

Thomas Parsons is currently in the 2nd year of an industry sponsored PhD at Loughborough University, and during this he has been based full time within the pharmaceutical company AstraZeneca. His main area of research is the use of Knowledge Management as an aid to pharmaceutical innovation, with a research objective of enhancing innovation within the drug development process. Thomas originally studied Medical Biochemistry at BSc level before moving on to work as a chemist within the pharmaceutical industry, he then went on to study for an MSc in Information Systems at Sheffield University before adopting his current role at Loughborough University with AstraZeneca.

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**Dr, Uwe Riss** is Senior Researcher in the Knowledge Management Research Programme at SAP Research. Once a mathematician, Dr. Uwe Riss earned a Ph.D. in Theoretical Chemistry from the University of Heidelberg. In 1998 he joint SAP. In addition, he lectured Knowledge Management at the University of Corporate Education in Karlsruhe. He takes a particular interest in people-focused knowledge management and the possibilities of portal technologies in supporting information flow. Another focus of his work consists in technologies to support knowledge-intensive work. Furthermore, he is interested in the foundations of knowledge management as an interdisciplinary issue between philosophy and computer science.

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**Prof. Dr.-Ing. habil. Christian-Andreas Schumann**, studied Industrial Engineering in the Technical University of Chemnitz, first doctor’s degree in 1984 and second doctor’s degree in 1987. In 1988 he got a call as associated professor for plant planning and information processes in the TU of Chemnitz. In 1994 he became professor for business and engineering information systems in the University of Applied Sciences Zwickau. Since March 2003 he is dean of the faculty for business and management sciences in the University of Applied Sciences Zwickau. In addition he is director of the Centre for new forms of education and director of the Central German Academy for Further Education e.V.

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**Eduardo Tome** graduated in Economics. He came to Knowledge Management and Intellectual Capital following the study of Human Resources Economics and Sociology of Labour: he made a Master Thesis on the Sociologic and Economic aspects of Vocational Training in 1994, followed by a PhD Thesis, on the
Evaluation of the European Social Fund, in 2001. Both thesis were made at the Technical University of Lisbon. Currently he teaches Economics and Social Policy at the Social Service High Institute in Beja, a small town in the South of Portugal. His main research interests are Human Resources/Intellectual Capital/Knowledge Management and Social Policy.

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**Christine E. Welch** is a Senior Lecturer at the Portsmouth Business School. Her research interests include systemic thinking, organisational analysis, learning and change. Her academic responsibilities include being the course leader for a proposed MSc Knowledge Management.

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**Johnson C.H. Yang** is the CEO of Distribution Business Group at the Sinon Co. in Taiwan. He received his master degree in Executive BMA from the Providence University. He has had more than 25 years practical experiences in supermarket franchise management, fresh food processing management, distribution management, and agricultural pesticide manufacturing management.

**Chia-Hui Yen** is a lecturer at Wu-Feng Institute of Technology, Taiwan and also a PhD candidate at National Taiwan University of Science and Technology. Her research field focuses on virtual community and electronic commerce. She has published research articles in PACIS and several journals in Taiwan.
A Proposed Study on the Evaluation of Strategic Alignment in the Gulf Cooperation Council Countries
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The effective use of knowledge to drive competitive advantage depends upon using a holistic approach that spans five key business considerations: Knowledge Management (KM), business strategy, information technology (IT) strategy, organization culture, and human factors. Hence KM shouldn’t be considered as stand-alone business “fad”. Instead, it should be aligned with business process, organizations, and IT to continuously capture, maintain, and reuse the key information, and arbitrates the strategic knowledge assets that improve business performance. This proposed study will investigate the alignment between knowledge Management KM strategy and business strategy pursued by the banking sector in the Gulf Cooperation Countries (GCC). Moreover, using the recommended conceptual model it will explore the impact of this alignment in the organization performance.

It focuses on GCC because there is a need for a context specific model for the KM in such countries. This model should consider the contextual, cultural, and technical factors that have a crucial effect on implementing KM and its strategies. The application of the available models and frameworks, which designed based on the skills, practices and studies in Western industrialized countries (such USA and UK), for KM in the Gulf countries might not yield expected results.

To achieve the aim of the study, an operational model of strategic alignment is proposed using Miles and Snow’s (1978) typologies for business strategy and Henderson (1989) co-variation perspective of fit. This model will be empirically validated through a survey of 180 banks selected equally from the six Gulf countries (Bahrain, Saudi Arabia, Kuwait, Qatar, UAE, and Oman). In addition structured interviews will be conducted in a well selected sample from each country. The analysis of both qualitative and quantitative data will be expose whether and to what extent the available KM models are applicable to the Gulf countries specifically and the Arab countries in general.

Keywords: Knowledge Strategy, IT Strategy, Knowledge management

A Framework of Intangible Valuation Areas and Antecedents
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This paper presents a validated taxonomy of intangible strategic value drivers and attempts to identify areas that knowledge workers have knowledge in as antecedents. The validated taxonomy provides a logical model to valuing intangible assets and a forum for managing them within the context of the business environment. The taxonomy turns the mirror inward and surfaces internal views of a business that define the strategic value drivers that are aligned with organizational
The initial decomposition of the taxonomy is a suggested human capital knowledge asset index (HC-KAI), which is developed by answering the following two questions: (a) what performance focus area the organization needs to focus on? and (b) what knowledge employees need to manage within each focus area? Qualitative data from focus groups was collected to validate empirically the theory based index driven by the two questions above. The index supports the development and use of knowledge in a business strategic plan to positively affect the performance and market valuation of a business enterprise. This paper supports the evolving foundation towards constructing a knowledge valuation system (KVS) that is aligned with business performance measurements and indicators and gives structure to the identification, valuation and subsequent reporting and disclosure of intangible assets.

**Keywords:** intellectual capital; human capital value drivers; critical success factors; knowledge valuation system; intangible asset taxonomy

**Knowledge Sharing: A Critical Success Factor for Risk Management**

**Athina Anthropopoulou, Aston University, Birmingham, UK**

The paper investigates organisational risk management in hospitals, and presents a framework for the improvement of risk management through the systematic use of risk-related knowledge, which is distributed among different groups of professionals in the organisation.

Existing literature on risk management and knowledge management is exceptionally rich. Nevertheless, existing knowledge management approaches neglect the idiosyncrasies of specific business operations, as risk management. Equally important, the literature on organisational risk management challenges the integration of the factors that influence risk management; however, does not explore knowledge and its manipulation throughout risk management.

In every organisation, risk management is part of the overall strategy, structures, culture, people, processes, and technology, and is simultaneously performed on these organisational elements. Indeed, risk management is recognized as one of the major concerns for health care organisations. Whereas information about almost every part of the organisational reality can be characterized as the “fuel” for the risk management processes, knowledge is the essential resource used to determine where this information is located, and how it should be interpreted and exploited, in the course of organisational risk management. Knowledge valuable to risk management originates from multiple sources and different groups in the organisation. Each group plays a distinctive role in the risk management lifecycle, based on its area of expertise.

This paper investigates how risk-related knowledge is used by different groups, how it is communicated between different groups, and how it feeds the risk management processes. Finally, the paper proposes a framework aiming to integrate knowledge about risk management from all over the organisation, as a means of achieving higher levels of proactive and reactive risk management.
The findings of the paper are derived from a case study on a hospital, member of the NHS (National Health Service) Trusts, in the United Kingdom.

**Keywords:** knowledge sharing, risk management, healthcare management, knowledge processes

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**A Framework of Personal Knowledge Management in the Context of Organisational Knowledge Management**

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Knowledge management (KM) is widely acknowledged as a critical factor for organisational performance. However, KM initiatives in organisations have often run into difficulties at the implementation level. Research into the causes of these problems has shifted the attention to the human dimension of KM. Recently some researchers have focused on personal knowledge management (PKM) skills and practices to emphasise this dimension.

In this paper we are discussing the role of the individual in the organization and clarifying the basic concepts of PKM: personal, knowledge and management. Our intention is not to make an explicit list of activities and strategies for PKM, but to indicate that PKM is an essential subject to be addressed for the further research.

**Keywords:** personal KM, organisational KM, knowledge

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**Promoting People-Focused Knowledge Management in the Engineering Industry: The Case of IDOM**

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This importance of Competitive Intelligence – CI – is in the capacity to conceive competitive intelligence advantage towards organizations, being prudent to be considering it as a complex organizational process. This evolution of competitive intelligence is translated by a development (i) of relevant concepts, (ii) of competitive intelligence programs, (iii) of methods of CI measurement, (iv) of models and process to explain and to define the CI process in organizations. The research description in this article contends to approach the way the research and teaching are challenging and changing beliefs of competitive intelligence. This paper approaches the development of professional’s practices that are at the root of the construction of the best practices to develop and to measure the impact of CI in organizations. This article also describes the discourse used in CI, as to permit identifying the key dimensions of it, the used taxonomies, the process and models that guide the CI initiatives and the methodologies developed to measurement it in organization. This discourses were identified in articles of the area, gathered in a literature review at academics periodics such as: Competitive Intelligence Review;
The Journal of Competitive Intelligence and Management, Mis Quarterly; in the articles produced in conferences such as: SCIP's Annual International Conference, Annual Structuring Competitive Intelligence for Greater [...] International Conference Information Systems – ICIS; and in the sites organized through enterprise and professional sites as: www.scip.org; www.outwardinsights.com; www.apqc.org. As final considerations we point out the need for future research where there is a greater interaction between the academy and the professionals, in the development of research project and teaching to define the best practices in CI, based in models constructed through professional’s daily actuation. That interaction can being advantages such as: development of multidisciplinary projects targeted to improve the quality of decision making; the execution of studies about the impact of the organizational culture on CI, addressing aspects such as human resources motivation, social relationship, organizational credibility and confiability; and the identification of key factors that permit the sustainable development of organization in terms the CI.

Keywords: competitive intelligence - study, research and teaching in CI.

At the Crossroads of Knowledge Management with Social Software

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The growing phenomenon of Social Software offers the chance of complementing the typical top-down approach on Knowledge Management with tools that are simpler, smarter and more flexible. Social Software is actually not new at all, but it is only recently that these tools were labelled as “Social Software” because of their common traits.

According to Stowe Boyd, the applications in this category cover one or more (not necessarily all) of the following elements:

- Support for conversational interaction between people or groups;
- Support for social feedback;
- Support for social networks.

E-mail, forums and discussion lists are also used for social interaction and some authors tend to include them too under the umbrella of Social Software. But there’s an important distinction between traditional communication software with its bottom-up approach, enabling people to organize themselves into a network based on their preferences.

What can Social Software actually do for knowledge management? Knowledge emerges in conversations, actionable knowledge is mainly the result of collaboration, and social capital is continuously gaining importance. Social Software provides the necessary support for conversations and collaboration, for knowledge creation, sharing and publication, for identifying experts and getting access to expert opinions worldwide.

Our paper contains brief descriptions of the various types of Social Software seen as knowledge management tools. Then, the three key categories of Social Software
(weblogs, wikis and social networking) are further analysed in connection with the five core KM activities included by Despres and Chauvel in their 1999 taxonomy of applied Knowledge Management: scan/map, acquire/create, package/store, apply/share/transfer, and reuse/innovate/transform.

A number of interesting examples extracted from different sources are included in the paper in order to illustrate the various ways in which Social Software could support Knowledge Management.

The last section is dedicated to a review of some of the problems hindering the usage of social software tools. It also includes few references to some of the latest developments and appealing trends in the field (Bliki, Real Time social networking, collaborative real time editing, semantic Social Network, the Augmented Social Network).

Keywords: social software, weblog, wiki, social network, social tagging, folksonomy

Knowledge Creation and Sharing - Complex Methods of Inquiry and Inconsistent Theory.

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Recent research and practice have led to the development of relatively complex methods for inquiry which can be applied by human analysts. However, it has appeared until recently that these could not be supported by software tools, since the limitations of traditional mathematical algorithms constrained their development. We suggest a model which lays the foundations for the development of software support, based on a paraconsistent approach.

Some of the methods available to analysts are based on the SST (Strategic Systemic Thinking) framework. This framework recognizes contextual dependencies, and enables analysts to include, as part of their analytical resolutions, conclusions which are in themselves contradictory. Software support for this kind of thought process would have been impossible to achieve in using traditional mathematical models.

Tools supporting analytical work have, in the past, fallen into one of three categories:- those which support data manipulation, those which provide support for process, and those which attempt to support analysis directly. Until recently, for complex analytical models such as the SST framework, only the first of these categories was realistically available. However, making use of developments in the field of paraconsistent logic, it is now possible to envisage development of tools in the second category – process support.

Paraconsistent logic was developed to provide a framework for inconsistent but non-trivial theories. Since the early 20th century the field has become very fruitful. Many thousands of papers have been published and important applications in computer science, information theory and artificial intelligence owe their origins to
insights gained from paraconsistency. The application suggested in this paper is very much in the spirit of this well established tradition.

**Keywords:** Knowledge Creation, Contextual Dependencies, Paraconsistent Logic, Analytical Support.

**The Knowledge Map, A Lubricant for the Firm’s Machinery**

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All institutions, firms and of course machinery need to run smoothly in order work efficient. Metaphorically speaking a key function to accomplish this is attained with the lubricant oil. In the organizational setting this centerpiece is an in-house service provider, in terms of the knowledge map. Thus, the general objective with this paper is to describe how corporate knowledge can trigger the service level of a firm. It involves grasping strategic elements to allocate key activities crucial for the organizational domain. In the quest for developing more efficient services, a knowledge map could be a valuable in-house service provider, catalyzing strategic implications. In this way a knowledge map function as a guiding tool for visualizing knowledge sources and identifying relationships among knowledge artifacts. Knowledge mapping can be seen as a process that tries to sort out elements, creating structure and guidance in various knowledge contexts. With a paucity of research done concerning knowledge mapping this paper endues future frameworks and modeling as a set of key factors is to be presented. Using an exploratory approach with a qualitative method, multiple case studies were used to conduct this research. Focusing on three multi-international knowledge-based service firms the sources of evidence were collected using a combination of interviews with local office managers and questionnaires with employees. Rusty old habits and daily routines can many times be the origin from which the quick and short eyed solution is made upon. This convenient way to retrieve knowledge can create path dependency to routines and procedures, and by that also favor a less suitable know-how. Thus, a number of factors are presented to improve internal processes of a firm and as a result speed up connectivity and increase openness between individuals. By that hopefully overcome some of the risks using knowledge in a job situation just because it worked the last time. As business is more turbulent than ever it can be very costly to neglect using the right knowledge and even worse having to duplicate it due to irretrievability. In addition, the study shows that formalization of an outspoken knowledge strategy which incorporates knowledge repositories can make ground for effective sharing and collaboration. However, an overwhelming fear of information overload, stresses the importance of a solid knowledge structure, suggestively provided by a knowledge map. Still, knowledge mapping is a process that is designated mostly in peoples mind in form of a conceptual and metaphysical state.

**Keywords:** Knowledge management, knowledge mapping, information retrieval and service provider
Accelerating Technology Transfer by Knowledge-Oriented Cooperation

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As regards innovative technological research - particularly for pacing technologies - Europe falls back always further behind the USA. What are missing are concepts for innovation accelerators and organizational means for their conversion into practice. In this contribution we apply the perspective of knowledge-oriented cooperation to technology transfer issues and present the idea of such an accelerator: a knowledge-oriented technology transfer network (TTN) between technology firms.

The innovative elements of our TTN concept are primarily:

- **Bridge function.** The postulate of an independent field of actors („technology interface”), that should arise between technology suppliers and customers for overcoming the technological gap between pacing and base technologies.
- **Technology transfer network.** The idea of a network of technology companies as facilitator between technology suppliers and customers for the exploitation of synergies during the realization of the bridge function.
- **Second generation network.** The concept of an inter-organizational cooperative network of the second generation which is especially sensitized for the social dynamics of knowledge oriented cooperation.
- **Knowledge-oriented cooperation.** The conscious focusing on the social dynamics of knowledge-oriented cooperation as work psychological perspective on knowledge management.
- **Practice community.** We essentially propose that knowledge oriented technology transfer networks be designed and cultivated following the Communities of Practice (CoP) approach. By this we aim at focusing on two central thoughts: voluntariness and interest. Voluntariness of participation in the network interactions as condition for successful cooperation on the level of shared (knowledge-oriented) interests.

What unites these elements to a whole is the hypothesis, that voluntariness and interest should be understood and applied in the management of the technology transfer network as critical success factors for the creation of a lively cooperation around knowledge (consensual negotiation in knowledge processes).

**Keywords:** communities of practice, knowledge-oriented cooperation, second generation network, technology transfer network, participation.
The Impact of Question Response Structure on Recipient Attitude: A Field Study in Knowledge Sharing

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This paper updates and extends the research on how the structure of a question asked of a source and the subsequent structure of the response influences a recipient's attitude towards knowledge received. Employing a field experiment, the study endeavours to replicate findings from an earlier laboratory experiment conducted by the authors. Results from the field experiment support those of the laboratory and comparisons between the two are discussed.

The findings presented in this paper challenge and in part dismiss the assumption made by some, who consider that results obtained in a laboratory experiment using a student population cannot be replicated in the real world. This study not only reveals replication of the findings, but also shows consistency in the size of the experimental effect between the laboratory and field studies. The paper also imparts exploratory insight into whether or not the cognitive disposition of a recipient is a factor that should be considered when structuring questions.

Findings such as those reported in this paper are significant to the body of literature on knowledge sharing. There is still limited empirical research that focuses on the recipient's attitude towards receiving shared knowledge. On the whole empirical research has been directed at either examining factors that may impede or enrich the source to share their knowledge, or how well knowledge of technological processes, innovation or best practice has been transferred (often studied within multinational organisations). However, there can be little doubt that appreciating and generating a better understanding of the perspective of the recipient of the shared knowledge is vital to understanding how to improve knowledge sharing in an organisation.

**Keywords:** knowledge sharing; question structure; recipient attitude, cognitive style

The First Experiences With IC Evaluation and Measurement in Serbia and Montenegro

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The paper represents a pioneer attempt of IC reporting in Serbia and Montenegro. Serbia and Montenegro is a country in transition, a phenomenon bearing numerous socio economic characteristics. Two IC reports were created, for one organization in the area, using Intangible Assets Monitor (IAM) and Danish Guidelines. During the reports creation, the necessary modifications were required, especially in the domain of indicators. Taking into account that in Serbia and Montenegro IC measurement has not been considered to be important, the data gathering systems are not customized to the existing IC measuring methods. The paper results are: insight into difficulties of IC reporting in a transitional economy, the comparative
analysis of IC reports created by application of two IC reporting techniques on one organization and the adjustments at the level of indicators. This opens a new research field in the change of the methodology itself being used in Serbia and Montenegro region.

Keywords: intellectual capital (IC), IC project, IC statement, measurement, transition

Intellectual Capital and Value Creation: Evidencing in Portuguese Banking Industry

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Intellectual capital has been described as the intangibles that drive the organizational value creation and nurture its sustainable competitive advantage. However, these intangibles cannot create value if they are not activated, combined and transformed. Even knowledge is not worth much if it is not put to productive use along with other organizational resources. This means that intellectual capital is a phenomenon of interactions, combinations and complementarities. As such, managing intellectual capital becomes a matter of creating and supporting connectivity between all sets of resources and activities that influence the organizational performance.

Intellectual capital is a complex phenomenon that requires theory and research methodology. Intellectual capital research is actually at critical cross-roads with increased emphasis on developing theoretical concepts and testing relationships guided by such concepts. It is vital to consolidate some findings, namely arrive at a set of operational measures that meet minimal criteria of measurement.

Management theory claims that the linkage between theoretical definitions and their corresponding measures has been generally weak although the process of construct development and measurement is at the core of theory construction. Linking theory construction to theory testing is a sine qua non condition for the management theory development.

Previous studies demonstrate that intellectual capital is positively and significantly associated with organizational performance.

The purpose of our study is: (i) to develop and validate a set of operational measures; (ii) to examine interrelationships among intellectual capital components and organizational performance and; (iii) to study the interaction effect among intellectual capital components and organizational performance.

Research model and hypotheses are analysed using the SEM/PLS (Partial Least Squares) statistical approach. We compare our results with those of two previous studies in Canada and Malaysia.

Keywords: intellectual capital, human capital, relational capital, structural capital, value creation.
Dynamic Analysis of Knowledge Management Practices in Consulting Firms. An Approach From the Business Dynamics Methodology

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The primary purpose of this paper is to utilize the Business Dynamics approach to analyze the impact of the Human Resource practices upon the intellectual capital of consulting companies, as a previous phase of the design of a simulation tool that facilitates the decision-making process for managers in a non risk environment.

Based on the Business Dynamics approach, one can derive that consulting firms have predominantly gone to market with their primary competitive advantage being the "knowledge capital" of the organization (i.e. - the know-how of its employees). Over the past 5 years economic trends have caused human resource groups within consulting firms to focus primarily on the employee to demand ratio. These policies have led to the down sizing of consulting companies and a growing reliance upon contractors or outsourcing to meet short term demand spikes which have helped to alleviate the fixed cost of having employees un-staffed. This practice, while it may appear fiscally smart and responsible in the short term, is having a longer term impact on the consulting companies, as the intellectual capital of these companies is conditional on the existence of internal professionals with enough knowledge and experience to perform the assigned tasks.

Based upon an analysis of various consulting firms that offer their services within Spain and their human resource practices (hiring, training, and salary incentives) we have designed a causal model that will evaluate the impact of various knowledge management policies upon the intellectual capital of these organizations, using as theoretical frame the Learning Organization Theory.

**Keywords and keyphrases**: knowledge management practices, human resources, business dynamic, simulation.

Dynamic Impact of Knowledge on the Innovation Process

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Finding new knowledge is certainly the ferment of innovation. However, new knowledge is also the enemy of innovation. Once the idea has been accepted and the plan for its implementation has been defined, the creation of new knowledge has the negative effect of introducing doubt and uncertainty and of preventing the concrete realization of the innovation task.

This paper studies this double role of knowledge in the innovation process: an innovation catalyst at the very first steps, where new knowledge must be found and developed, and an innovation stabilizer at the more mature steps, where acquired knowledge must be formalized and standardized. We describe the various steps of the innovation process, as they have been determined in the literature. We analyze the dynamics of knowledge in this process and its impact on innovation birth and development thanks to a modeling approach coming from system dynamics.
Through our modeling, we consider the tacit and explicit dimensions of knowledge at the subsequent stages of the innovation process. We analyze the level of knowledge expansion, from individual to collective. We also differentiate incremental innovation (improvements of existing products/processes) and radical innovation (introduction of breakthrough products/processes) where the role of knowledge can be different. We illustrate our models with some examples borrowed from the literature. Finally we conclude on remaining questions and research perspectives.

**Keywords:** Tacit knowledge, explicit knowledge, innovation process, SECI process

### Implementing e-Business Through KM: An Empirical Investigation in SMEs

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Electronic business or e-business is any information system or application that empowers business processes (Amor, 2002). Ackerman (2000) suggests that the presence of technology without a context is irrelevant and highlights the necessity for organisations to adopt systematic approaches to sharing knowledge. Nonaka and Takeuchi (1995) classify knowledge under the tacit/explicit and personal/collective dimensions. They also focus on the issues of converting one type of knowledge into another type. The conversion processes among the four types of knowledge are, namely, socialisation, externalisation, combination and internalisation.

SMEs are facing challenging times. Numerous reports and studies (see, for example, Dawson and Kirby, 1979; Davies, 1984; Pal and Medway, 1998; Peston and Ennew, 1998) chart the demise of the small independents. E-business and knowledge management offer SMEs a route for survival (Ofek and Sarvary, 2001). However, few, if any, studies of e-business have considered the dynamic relationship between knowledge management (KM) and e-business in SMEs. Previous arguments provide a static view of KM and e-business, and ignore the conceptions of the four conversion processes introduced by Nonaka and Takeuchi (1995) on every level of e-business.

This paper examines the relative importance and significance of the four conversion processes introduced by Nonaka and Takeuchi on three different levels of e-business through an empirical investigation of 139 small to medium sized enterprises in the Spanish Optometry sector using a multinomial logistic model validated by factor analysis. The results support that, in order to implement e-business, companies need to provide and support internalisation, socialisation and externalisation as a prior step. Then, to consolidate e-business, companies need to support externalisation. Finally, results also support that socialisation affects higher levels of e-business.

**Keywords:** Internet, e-business, knowledge management, SMEs.
A Personal Knowledge Management Tool That Supports Organizational Knowledge Management

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Organizational knowledge management and personal knowledge management provide two different perspectives on the development of knowledge management tools. Efforts on organizational knowledge management emphasize the importance of creating an environment where knowledge is generated, shared and used. However, it is quite common that the implementation of organizational-level knowledge management systems suffer from a lack of motivation from participants and the associated high cost. On the other hand, personal knowledge management focuses on understanding how a knowledge worker’s activities contribute to their own performance. As a result, users of personal knowledge management (PKM) tools are highly self-motivated in managing their own information. However, an obvious limitation of current PKM tools is that they only focus on providing knowledge management support at an individual level. Given the pros and cons of the two perspectives, the research reported in this paper seeks to bridge the gap between organizational knowledge management and personal knowledge management. We propose to use a PKM tool for capturing knowledge and sharing them with others. This paper describes the design and implementation of PK-MAST (Personal Knowledge Management And Sharing Tool), which is a novel PKM tool and framework that supports both personal knowledge management and organizational knowledge sharing. PK-MAST gives the user a strong ‘personal’ feel in capturing knowledge for his/her own purposes and is very easy to use, but it also supports selective knowledge sharing with minimal effort from the user.

Keywords: personal knowledge management, organizational knowledge management, selective knowledge sharing

Combining Scientific Research With Knowledge Work in Finnish Bio-industries

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The paper presents some results of the ongoing research project aimed to develop strategic models to serve coordination and commercialization of intellectual capital, skills and technology at the university-industry interface, with biosciences taken as a reference field of study. We examine two knowledge management alternatives in Finnish bioindustries tentatively called ‘university-driven’ and ‘company-driven’. The following question is researched: “What is the status of intellectual capacity of BT companies operating in strategic scientific research and knowledge work, and what implications the current practices have for a joint production process strategizing?” In so doing, the concepts of ‘scientific research’ as creating a common property resources and ‘knowledge’ as wholly owned by those incurring accumulation costs are operationalized. We corroborate aforementioned concepts with our vision of ‘scientific research’ in companies as strategic scientific research leading to
publishing activities, and ‘knowledge work’ as applied R&D giving rise to patenting activities, which are correspondingly evaluated in two empirical case studies. With the help of the developed evaluation procedure allowing us to test and apply different indicators, a biomedical evidence production process from idea to novel production as evolving throughout different stages, or phases, and constituting a joint production process is studied. We have discovered how much scientifically-, practically- or commercially-oriented different stages are, and what competitive (dis)advantages and commercial opportunities they bear. Optimal strategy for a joint production process is suggested at the end, as combining advantages of scientific research and knowledge work at the industry-university interface. It has implications for inter-organizational and particularly so industry-university labour division. Such strategy builds on an optimal way companies organize their capabilities, mobilize needed resources, and capitalize on a trade-off between proprietary interests and open science, while presumably foster ‘generative relationships’.

**Keywords:** Finnish biotech companies; scientific publishing; patenting; intellectual, practical and commercial capacity; joint production process strategy

**Complexity Theory and Knowledge Management Application**

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This article traces the development of complexity theories and proposes a Complexity Representation Model (CRM) for management processes. The purpose here was to translate key elements of complexities theories (e.g. self organisation, adaption, co-evolution, chaos) into a recognisable form and relate these to management practice (particularly knowledge management and learning).

A further model Complexity Application Model (CAM) is offered that shows the relationship between the formal and informal aspects of the management environment. It models an active environment that should learn and adapt to minor perturbations and major schisms. It is a conceptual guide as to the “ideal” management system, one that self-organises, learns, adapts and evolves with its environment. Example application to product innovation and product development is given.

**Keywords:** Complexity theory, Complexity theories, complexity representation and application, knowledge, learning.

**An Answer Shared is a Problem Solved: Encouraging a Knowledge Sharing Culture in the NHS.**

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Within the NHS there is a wealth of wisdom, often unused, stored within its employees. This knowledge has evolved through practical experience, and could have major benefits for local and even national health care practice in the UK. However, unless this knowledge is easily accessible, it will remain within the
memories of NHS employees, destined for retirement, maternity leave, or career change. The management of knowledge is vital to the improvement of patient care. The NHS is made up of many micro-organisations, and all of them have their own systems for carrying out procedures inline with government standards and guidelines. Some will operate more efficiently, and it is this good practice that needs to be shared, so that NHS professionals can apply it to their own practice. Sharing knowledge on a local or national level will lead to improved efficiency and quality, better team-working, and improved patient care.

To encourage NHS health professionals to share their knowledge, two web-sites were commissioned, and an information scientist was appointed to search for suitable content.

The Knowledge Management Research (KMR) web-site provides access to summaries of quality research on knowledge management, when applied in health care settings. The aim is to provide evidence of how health care organizations are managing the knowledge of clinical and non-clinical staff.

The National Library for Health Specialist Library for Knowledge Management aims to provide practical support for the implementation of KM in the NHS. The web-site contains access to case studies of good practice, tools to implement KM, relevant reading lists, and a virtual community with a weblog to promote knowledge management within the NHS and encourage discussion and share ideas.

Together with the virtual community, both sites hope to provide a practical, research-based environment for implementing knowledge management throughout the National Health Service.

Keywords: NHS, knowledge management, communities of practice, knowledge-sharing

Knowledge Management Strategy – What Happened Next?

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In 2001-2003, we visited 16 UK organisations as part of a research project into the state of knowledge management and the formation and implementation of knowledge management strategy. During that work we recorded their intended strategies and action plans for improving knowledge management at that time.

We have now revisited 11 of the same organisations approximately two years after the first visits and have conducted 22 interviews with participants in the original research. The two sets of data therefore present a good picture of how knowledge management has advanced in the UK over the past 2-3 years.

Although the majority have made progress in knowledge management, implementation of the plans has been only partial. The majority of the organisations are still at the same “aware but not actively doing KM” stage as they were 2-3 years ago. In at least two cases, knowledge management is now less advanced than it was when we first visited: in one organisation, knowledge management activity has disappeared altogether.
The main barriers that respondents have perceived to making progress include:
- Failure to commit sufficient time and resources to move the plans forward
- Inability to measure organisational impact, making it hard to “sell” the benefits
- Lack of – or departure of – suitable leadership for the changes
- Poor general understanding of knowledge management throughout the organisation, in particular when key individuals left the company.

The main enablers that they have identified to help overcome them include:
- Use of IT as a mechanism for change, even though people factors were seen as crucial
- Strong passionate individuals who were champions for implementation
- External drivers in the form of accreditation or legislation
- Integrating knowledge management actions into current strategies and initiatives thus minimising organisational resistance and effort

Overall, knowledge management continues to be seen as highly relevant, but general levels of understanding are poor. This can lead to difficulties in generating enthusiasm for a specific “knowledge management” initiative because it is seen as “just good management practice anyway”.

Keywords: knowledge management strategy, action plans, implementation barriers; implementation enablers.

Integrating Action Learning and Knowledge Sharing for Developing Co-operation Networks Between SMEs in EU15 and New EU Member States

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The paper studies the opportunities and challenges of knowledge sharing between SMEs from Western and Eastern Europe. Analysis is made of the lessons learned from the project, “Development of the Innovative Entrepreneurship Potential of SMEs as Knowledge-sharing Trans-national Technology Transfer Partners” - a part of the EU 5th framework programme. Pre-survey results and follow-up survey results have been interpreted in the context of action learning and networking activities.

The most important knowledge development fields, where international networking was considered relevant, were for East-European participants developing contacts with potential business partners and studying their background and motives. For West-European SMEs, national and EU support for innovative entrepreneurs and technology transfer activities had a high priority. As much as 60% of West European SMEs were interested in outsourcing part of their existing production to another firm whereas only 9% of East European SMEs were interested in outsourcing.

Knowledge acquisition needs and the readiness to participate in the international learning network are related to the different development paths of technology-intensive SMEs: commercializers of unique technological expertise; SMEs moving
from subcontracting/outsourcing to joint development activities; SMEs that have to achieve an economy of scale through growth involving international markets; technology outsourcers driven by cost cutting or the limitations of their technological and knowledge base; network organisations as a tool for developing technologies or creating a new value chain. The short-term orientation towards creating partnerships focused on rapid business deals is a barrier inhibiting the growth of virtual learning communities involving SMEs in Eastern and Western Europe.

**Keywords:** knowledge sharing, technology-intensive business, East-West co-operation, action learning, SME

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**The Intellectual Capital of the United States**

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This paper will present preliminary data on the intellectual capital of the United States. As a means of comparison, the data mirrors the frameworks already developed in previous studies of the intellectual capital of nations or regions (Bontis, Pasher, Andriessen & Stam, etc.). The paper will also offer some extensions to current theory, including implications for knowledge strategy and the protection of knowledge assets. Data on knowledge protection standards in the US, for example, are considered. Further, the implications of the national indicators for choosing a strategic path will be considered, specifically how organizations can evaluate the risk environment within which they develop and protect their intellectual capital.

**Keywords:** intellectual capital, knowledge strategy, national factors, knowledge protection, risk

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**On the Elicitation of Knowledge in Collaborative Decision Making Settings**

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Collaborative decision making, aiming at serving organizational needs, can be facilitated through a series of argumentative discourses carried out among decision makers. As such discourses evolve, the decision makers’ knowledge is usually clustered around specific ideas, solutions or views, while the whole collaboration process can result in knowledge exchange and reconstruction. Adopting a communities of practice (CoPs) point of view, we intend to exploit the interrelations occurring between the decision makers’ domains of expertise and mental models, as well as the associated structuring, evolution and evaluation of the decision making process. We argue that such communities, when supported by the appropriate means for communication and collaboration, can develop new, explicit, state-of-the-art knowledge. To address this issue, we have developed a web-based platform that can be employed as a forum of reciprocal knowledge exchange.
conveyed through argumentative discourses, the ultimate aim being to support the related decision making process. In this paper, we focus on the conceptual framework and the technical solutions we have employed to build the proposed platform, paying particular attention to its knowledge elicitation functionalities. These are illustrated through an example case concerning a discourse related to strategy formulation.

The core component of the proposed platform is a discourse graph which facilitates the decision makers’ communication and serves the visualization of the overall discourse. In our approach, the discourse graph acts as a “Knowledge Trap”, since all possible discourse items inserted in the graph are considered and treated as interrelated pieces of knowledge, and have a specific semantic value according to their definition and placement. Furthermore, the platform is able to exploit the decision makers’ actions to maintain a set of properly developed metadata reflecting their attitude in the specific knowledge domain (e.g. how often the cost criterion becomes the decisive factor for the resolution of a discourse and which decision makers are always contributing to this issue). A third functionality enhancing knowledge elicitation builds around the construction of a chronicle (in the form of log files) that provides a summary of the decision makers’ actions during a discourse. This information can be further analysed with cluster analysis or causal maps in order to enrich the users’ profiles and amend their mental models. Furthermore, it can be used for the analysis and validation of the related decision making process. Finally, pieces of these chronicles can be retrieved from the platform’s Knowledge Base through a search engine to be reused in future discourses.

Keywords: Knowledge Management, Knowledge Acquisition, Decision Making; Ontologies, XML technologies.

Knowledge Management Strategies of Software Development Organisations

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Because of the recognition of knowledge, as strategic resource, knowledge management became a management theory. But this strategic approach – and the knowledge-based theory of the firm – is still new, continuously changing, and waiting for several challenges.

In early years the exploration and examination of separate knowledge management tasks (knowledge transfer, sharing, etc.) were typical. Later the focus moved to factors that are able to create the context of knowledge management, and to support these activities. Although knowledge related areas are researched for several years, there are still no commonly accepted and defined concepts, models or frameworks. The knowledge management practice of organisations is determined by their own understanding, interpretation, and the approach of consultants or external experts.

There is an endless discussion about the role of technologies (especially IT) in knowledge management between researchers and practitioners. The goal of this
research is to identify the supportive factors of knowledge management according to the knowledge management strategies, and to set the conditions of their usage. The scope of this research to observe organisations, which have matured knowledge management practice, and there are information about daily practice, and not only about the initiating project. But the results of this research should be useable for organisations, which are just planning or developing their knowledge management activities.

Software development companies have been selected as scope of this research. Software development requires knowledge that embeds in products (software), and knowledge that describe organisational processes. In this case the area of activity by itself justifies the requirement of conscious management of knowledge.

In the research 72 cases – software development organisations – were examined. The research is focusing on knowledge management solutions in software development processes. The deep, detailed description provided the possibility of examining relationships that could be ignored by using only statistical analysis. Through quantification of cases, statistical analyses were also possible.

The goal of the research to provide guidelines, checklist and advises relating to KM supporters for organisations, which are planning to develop a KM practice, or which already have one. These KM supporters are supposed to provide or sustain higher KM efficiency.

Keywords: KM strategy, software development, KM enablers, influence factors

Lighting up ‘Blind Spots’ While Measuring Knowledge Capital

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In the last years there have been many efforts from practitioners and researchers alike to develop a way to represent knowledge capital in order to get more adequate information about intangibles. A more accurate description of organisational reality would help to improve decision taking processes of managers and provide stakeholders with more complete information about the organisation.

By getting an insight into the discussion on Performance Measurement Systems for Knowledge Capital (PMS for KC) and analysing the way those instruments are used in organisations, a number of problems have however been determined:

- PMS for KC are criticized by managers for not producing satisfactory results.
- The discussion at present has a strong instrumentalist focus and concentrates on the tools itself, their functions, IT design and development possibilities.
- There is just little empirical material that analyses the way PMS for KC really work in organisations.

PMS for KC try to represent organisational reality. There is, however, no chance of representing reality with a hundred percent certainty. This fact results from the consideration that observations of organisational reality already entail conceptual differentiations: Some aspects of reality are perceived, but others are
unconsciously excluded. As a consequence, organisations obtain unintended ‘blind spots’ in their perception of organizational reality while using PMS.

Thus, we introduce a more reflexive way of dealing with these instruments. Our contribution presents the concept of “First and Second Order Reflexion of PMS” proposing a number of ways towards a more sustainable implementation and use of PMS.

**Keywords:** Knowledge Capital, Performance Measurement Systems, Organizational Reality, First and Second Order Reflexion

The Role of Document Classification Structure in Knowledge Sharing: Improving Knowledge Sharing Within the Organization by Creating Sample Document Repositories

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In our study we deal with the most important technical factor of document management, the grouping of documents and the repository structure associated with this. We think that one of the pillars of successful knowledge sharing in addition to the factors of psychology, sociology and enterprise culture is the properly formed repository structure.

We have to rethink the goal and tool of document management based on the object-oriented paradigm. The document has to be examined as an object that is born, has a life span and dies. Every document (that is also an object) has a unique name, attributes that describe its state and operations that can be interpreted on the document classes. The repository structure also has to be established based on the object-oriented view.

There are two documents that have a unique role in document management. One is the notes and the other one is the calendar. These two documents are examined in an object-oriented paradigm separated from the other documents and we also sum up the principles to be used for their management. Our hypothesis is that the transformation of tacit knowledge into codified (explicit) knowledge and the sharing of knowledge within the organization are helped by the use of electronic notebooks and electronic calendars.

**Keywords:** knowledge management, knowledge sharing, document classification, object-oriented paradigm
The “modern economy” is characterised by knowledge intensive production processes, increasing specialisation, division of labour, high velocity and need for change. Companies have to deal with stronger competition, individually specialised customer needs, an explosion of knowledge and information streams and ongoing internationalisation processes. The formation of organisational networks provides a possible solution to achieve competitive advantages through the generation, transfer and collaborative use of company relevant assets. For example to meet the competition within the European Union, to enter new markets, to create new business contacts and to develop knowledge about the rules, regulations, barriers and special conditions of foreign markets, the formation of co-operations/networks can be seen as a chance (principally for SMEs) to bundle a higher potential of resources. Resulting the estimated general costs and furthermore the risks are shared between the involved partners. A further advantage for companies collaborating in a network is the access to a broader knowledge basis for the improvement, optimisation and innovation of business processes, products and services. The above mentioned is particularly important for technology-oriented companies who need a high level of innovation and quality at a competitive price. Co-operations in the technology sector are increasing and could be a smart future form of organisation to ensure the survivability and competitiveness of technology-oriented companies.

This research study on technology-oriented corporate networks helps to get an overview about challenges, benefits, structures and success criteria for the formation of networks. Successful co-operations ensure high future perspectives as knowledge and resources can be shared to optimise business processes within the partner companies and within the corporate network. Network management and leadership is important to set guiding lines for the design, organisation, communication and collaboration whereby specific success factors have to be taken into account. Knowledge is one major factor for success to gain sustainable competitive advantages. Through the focus on strategic and operative knowledge management with promoting organisational pre-conditions and through an efficient network management the way from network formation attempts to a functioning network structure is coined by success.

**Keywords:** Corporate Networks, Knowledge Management, Network Management, Criteria for Success, Organisational Conditions
Knowledge Sharing via Technology

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A great deal of knowledge within organisations resides in the minds of their employees. To capitalise on individual knowledge, organisations need to turn it into collective corporate knowledge. One way to achieve this is to encourage sharing of knowledge between individuals and groups within organisations. In theory, the role of technology is seen in enabling and facilitating sharing through creating a connected virtual environment and shared knowledge stores. However, there are major differences among researchers regarding the real value of technology in knowledge sharing.

The objective of this research was to identify most popular types of technology used to perform knowledge sharing within a knowledge-intensive organisation and to investigate its effectiveness in different application time and place contexts. The subjects were 49 employees of a global professional services firm who participated in the study on a voluntary basis. The participants were asked first to name the technology most frequently used to share knowledge in each context and then to evaluate its effectiveness on a scale from 1-strongly disagree to 7-strongly agree.

The analysis of the respondents’ answers revealed that their preferences differed depending upon the application context. In summary, email was the preferred option for different-time (irrespective of place), presentation software for same-time-same-place, and voice conferencing for same-time-different-place contexts. With respect to effectiveness, technologies supporting knowledge sharing in same-time contexts were generally perceived as being more effective than those in different-time contexts.

**Keywords:** knowledge sharing, knowledge sharing systems and technology, technology acceptance, survey

A Process Framework for an Interoperable Semantic Enterprise Environment

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Knowledge workers rely on cooperative dealing in information assets. When talking they have the appropriate cooperative know-how to transfer information shaped in a way that others can understand. But does this go well along business processes too? Consider a typical business scenario in modern economy. An enterprise trying to model its business processes across departments needs to provide knowledge extraction as well as knowledge integration while working on knowledge intensive activities with numerous applications. Valuable knowledge is composed by knowledge workers in isolated steps without adequate methods to transform it into information and to provide these information assets to others. The process of knowledge-co-production does support such activities.
This paper describes a process framework of interoperable semantic enterprise environments (PF-iSEE) for conceptualising knowledge by coupling business process activities and the knowledge transfer cycle. The PF-iSEE is triggered by an activity and starts the knowledge transfer cycle.

The knowledge transfer cycle provides six core concepts with methods, tools and templates to create, manipulate, store and retrieve information. Around the knowledge transfer cycle, special methods work in the context of business process activities with a representation model that can be a global, role depended or application inherited concept representation.

The paper introduces the main advantages and challenges of each core concept. Furthermore, it describes a way to support users when extracting knowledge as knowledge worker and during the process of implication as knowledge consumer. In both cases the user and the user’s main application have to be considered as a knowledge unit: the smallest constituents on which the PF-iSEE launches.

**Keywords:** Semantic Interoperability, Enterprise Semantic Web, Semantic Information Retrieval, Knowledge-Co-Production, Knowledge-Cooperation, Knowledge Transfer Cycle

**Knowledge Management in Realist Perspective: Analysing a University’s plan for Strategic Change**

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European (and Danish) Universities are confronted with new demands for change. In short, this transition can be described as a transition from a European Humboldtian tradition, emphasising free research and self-government and paid for by the state - to an Anglo-American tradition introducing strategic management, marketisation and privatization to both research and education. In this transition university employees often find themselves confronted with dilemmas where their perceptions of their roles, values and obligations are challenged with different values and other obligations different from the ones that they were used to. This is often a frustrating process for such employees as they see their values challenged by new, and perhaps alien, values in an often very blurred process.

Replicating concepts from management theory universities present strategic plans in order to cope with problems of transition - and the question investigated in this paper is whether such plans will support the transition and solve the dilemmas or whether they will fail or even work against the original intended goals. This is explicated through an analysis of a proposed strategic plan from a nearby university that draws on a theoretical framework of reality that emphasises the values of the actors involved.

The paper concludes that the proposed strategic plan could, if in part, support this process of transition, but in the plan there is no indication of what action should aid the employees in this transition. In the language of the theory of reality the plan is “abstract” and not “real” as it does not show the employees what (new) values they should live by – instead, they are presented with some supposed facts and a new
logic – a market logic - that works contra to the logic of enlightenment that these employees know from their pasts. Therefore, it is concluded that as a knowledge management exercise, the proposed strategic plan is of little help in realizing its intended goals.

Keywords: Knowledge Management Strategy; university change; theory of reality; social science method.

Knowledge Management and Business Intelligence: The Importance of Integration

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Abstract: There has been some confusion as to whether KM is part of BI or BI is part of KM. The lack of clarity is seen to be, in part, dependent on how the two concepts are defined. Both concepts promote learning, decision-making, and understanding. Yet, KM can influence the very nature of BI itself, especially since BI models often ignores the impact of tacit knowledge. Hence, this paper explains the nature of the integration between BI and KM and makes clear that BI should be viewed as a subset of KM. Moreover, BI should be managed under the KM umbrella.

Keywords: Business Intelligence, BI, Knowledge Management, KM, Integration, CKO

How to measure IC in regional clusters? The Intellectual Capital Cluster Index (ICCI)®

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The objective of the paper is to provide an strategic framework and tool to measure and value IC in regional clusters. A theoretical cluster strategic framework is presented and cluster fundamentals are discussed for proper model development. We used design methodology to construct a model which achieves the aforementioned purpose. The paper provides a comprehensive model to describe, map, measure and value IC on clusters and systematically control the IC evolution. A very useful tool of information and practical assessment for IC is provided to cluster agents and policymakers to establish proper strategic initiatives. New ideas about IC measurement in clusters are provided to academia. So far, no IC cluster model has been designed. This paper fulfills an IC measurement model to help individuals involved in clusters, such as managers, policymakers, etc.

Keywords: intellectual capital, regional clusters, territorial value chain, Strategic Management
Managing Project and Process Knowledge in a Pan European Initiative

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ERTMS, The European Rail Traffic Management System is a vast and complex EU rail transportation initiative and as such, its history, associated activities and deliverables span over many committees, organisations and stakeholders. To date no single repository of information has been developed to preserve the heritage of this vast and expensive initiative as well as guide the current and future stakeholders in finding information relevant to their needs and perspectives.

A Knowledge Architecture for capturing, storing, retrieving and reusing any form of information or knowledge and in any electronic form relevant to ERTMS has been developed in Atkins. The so called ERTMS Knowledge Exchange (ERTKE) as developed by two Atkins experts at Advanced Technology Group has been piloted in an advanced web based application. The ERTKE is based on a hierarchical perspective on the essential aspects of knowledge in railways which has subsequently been decomposed into more detail. The notation used for knowledge capture, structuring and representation is based on Weighted Factors Analysis (WeFA) methodology.

The high level railway knowledge architecture has been decomposed into 7 ontologies and many layers of detailed domain information. Given the enormity of the task, effort has been focused on the Control Command System (CCS) requirements and knowledge dimensions.

**Keywords:** ERTMS, WeFA, Weighted Factors Analysis, Pan European Project, Rail Traffic Management

How can we Assess Knowledge Management? Constructing a Holistic Assessment Framework of KM

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This is an era in which knowledge plays a dominant role in our daily business lives. Intellectual capital has gradually taken the place of traditional tangible capital in many business organizations. However, practitioners are often puzzled about where they stand, how well they are doing, and what they should do next. This paper aims to construct a knowledge management maturity model as a means to help answer these and related questions.

There are three components in the proposed model: maturity levels, knowledge management processes, and knowledge management capabilities or enabling infrastructures. The maturity levels are based on the capability maturity model (CMM) of SEI. This model divides the knowledge management process into four main sub-processes: knowledge creation, knowledge storage, knowledge sharing, and knowledge application, emphasizing the need for continuous process...
improvement. Furthermore, knowledge management enablers are integrated into KMMM to describe how it supports the practices at each maturity level. The applicability of this model is evaluated through case studies, which also serve to illustrate how knowledge management practices among organizations are compared, and what maturity paths organizations can follow. Three Banks were taken for cases study through in depth interview with their senior managements. By analyzing data gathered through the process described above, the conclusion of this study is induced.

**Keywords:** knowledge management, knowledge management maturity model, knowledge management process, maturity model

**A Complexity Theory Approach to Knowledge Management – Towards a Better Understanding of Communication and Knowledge Flows in Software Development**

Matti Koivuaho and Harri Laihonen, Tampere University of Technology, Finland

Software businesses offering tailored solutions are composed of selling expert knowledge and problem solving capabilities. The project based nature of the development efforts and the dynamic composition of developer teams challenges traditional models of management that are based on rigorous design and splitting of tasks. It can be argued that management by traditional waterfall model of software development does not consider enough the dynamic nature of communication and activities.

As knowledge intensive work focuses on team effort and iterative working methods, it is critical to elaborate sharing, distributing and dissemination of knowledge. We offer a dynamic knowledge flow model using the concept of a knowledge flow cube as a tool for understanding and improving multidimensional knowledge processes of software development. It is a three dimensional conceptual model, that can be used to analyze the input, internal and output knowledge flows of an organization. Input flows refer to the knowledge that project receives from outside of its boundaries. Output flows refer to the knowledge that project shares with the rest of the organization. Internal flows are used to depict the communication within the project.

Complexity theories applied in the paper offer a novel approach to knowledge management, embracing organizations as complex social systems. It offers an in depth view of communication networks where independent professional agents are connected via a polymorphic array of knowledge flows and communication processes. The nature of communication and knowledge flows are analyzed on an individual and a group level. The discussion focuses on a case study of two small sized Finnish software companies.

This paper has two main objectives. First, it offers a new way of seeing the software project from a communication and knowledge flow perspective. Second, it assesses knowledge flow cube as a tool which can be used for elaborating software projects.
Keywords: knowledge flows, communication, software development, complexity

Management Control and the Dynamics of Knowledge Sharing In Knowledge Intensive Organizations

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The crossing of a knowledge gap between professional groups is demanding from the viewpoint of knowledge management and it might require a fresh mindset related to the control methods. The need for change in the management control stems back to the challenge that bureaucracies and hierarchical organizations are facing as the world is becoming more interconnected, due to the effects of information technology and global economy.

As a reaction to the increasing complexity of the contemporary world, organizations have sought to increase lateral communication between functional units in order to dissemble hierarchical structures and to disseminate knowledge freely within organizational boundaries. Teams have been made increasingly modular and the scope of tasks more self-organizing, aiming to decentralize decision making.

The decentralization development has implications to management policy, as decentralized decision making reduces the management’s capability to control and direct the actions of the subordinates in a traditional manner. The role of management might be transforming from supervision to mentoring, which is also noted in the knowledge management discourse. From the viewpoint of knowledge management, classical technocratic control mechanisms may have to be rethought, since they could stiffen activities and reduce innovative capabilities and motivation in creative knowledge work. Yet, some control aspect is essential to management, which by definition concentrates on exercising power and controlling actions.

The conceptual analysis of this paper elucidates the role of knowledge management in developing human communication networks and it concentrates especially on three concepts of control: structural holes, technocratic control and socio-ideological control. The analysis is based on a literature research considering communication and control relationships between the parts of a system and how these relationships build up the overall dynamics.

Keywords: control mechanisms, social systems, knowledge flows, communication

Knowledge Creation and Sharing Mechanisms – Valuating Knowledge Management of Inter-Firm Human Resources

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The management landscape has changed like a kaleidoscope. Today, experts worldwide think of organizations in terms of learning systems, knowledge flows, the value of intellectual capital (IC), and the balances of the forces of natural evolution in order to create enough structure to manage effectively (Amidon, 1998). An effect
of this change is an increase in the importance of human resource management (HRM). The key to a healthy economy is the productivity of the human resources, and consequently, the interest in frameworks for measuring, for example IC, has expanded simultaneously.

However, these frameworks mainly deal with the intra-organizational aspects of HRM, and primarily focus on measurement instead of valuation (Andriessen, 2004). In contrast, this paper investigates the valuation of knowledge management of inter-firm HRM. It focuses on valuation in contrast to measurement is in accordance with Mouritsen (2004) who claims that “[…] it is not measurement as such that is in demand; it is the provision of explanation” (p. 263) and “measurement is not only a conclusion; it is the beginning” (p. 265).

When considering the evolution of technology, economists often assume the existence of knowledge spillovers, especially across firm boundaries. This paper suggests that software used to collect, store, manage, deliver, present, and manipulate data on human resources can increase the inter-firm knowledge spillovers and thus, facilitate the process of creating and sharing HRM knowledge across firm boundaries. The argumentation is based on a case study of an IT project. The aim of the project is to design and develop a web-based benchmarking tool. The tool facilitates organizational learning through inter-organizational knowledge creation and sharing on HRM.

The paper addresses knowledge creation and sharing mechanisms by discussing how an IT benchmarking tool can support organizational learning through inter-organizational knowledge sharing. Initially, the distinction between measure and value is discussed. Next, the paper reviews the literature on inter-firm HRM knowledge management systems. This is followed by a discussion of the importance of inter-firm knowledge flow and the limitation of knowledge spillovers. Finally, the theoretical arguments are compared to the empirical experiences mainly with focus on the success criteria for an IT benchmarking architecture.

**Keywords:** Knowledge creation, knowledge sharing, inter-firm knowledge management, HRM, illustrative case study.

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**Assessing the Levels of Knowledge Transfer Within E-Commerce Websites of Tourist Organisations in Africa**

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The Internet has led to the rapid growth of electronic commerce (e-commerce) because of its ability to reach every corner of the world and also provide an unprecedented level of connectivity and the ability to communicate efficiently and effectively at modest cost. For an e-commerce system to succeed within the emerging global marketplace it must be able to properly transfer knowledge, whether it is generated within the system or derived from the external environment. Knowledge transfer requires a high level of interactivity to allow users to place the information provided into their own context. This conversion of information into knowledge can give an organisation’s website the competitive edge to succeed in
the global marketplace. The increased competition within the tourism industry, the exponential growth of the Internet and the size and distribution of the target markets are some of reasons why knowledge transfer is so important within e-commerce systems today.

A survey was carried out to find out how websites of tourist organisations in four African countries disseminate knowledge, to whom, in which part, when, in what form and for what purpose. A total of 554 websites of national airlines, national parks, tourism-promotion organisations, hotels/lodges, tour operators and travel were accessed and examined for facilities for dissemination of knowledge. The websites were first grouped according to the level of development of their e-commerce system before being examined. Level 1 consisted of informative websites where little interactivity and no transactions take place, while level 3 have fully-fledged interactive, e-commerce systems. The countries studied were South Africa, Kenya, Zimbabwe and Uganda. These four countries are well known as popular tourist destinations Africa south of the Sahara and they have been chosen because they all have the safari type of tourism for which this region is so well known and which is so important for each nation’s economy.

Initial results show that fully-fledged e-commerce websites have interactive tools and activities which enable the transfer of knowledge most of which can be used for choice support. The fully-fledged e-commerce websites through the interactive tools gathers knowledge about customers and resources available which in turn could be used to personalise services to every customer. The authors recommend that tourist organisations from Africa need knowledge management tools which encourage exchange of knowledge as it is fundamental for business-to-business and business-to-consumer e-commerce.

Keywords: Knowledge Transfer, E-Commerce, Tourism, Africa

**Codified Knowledge Management – a Strategic Approach to KM, Based on the Exploitation of Existing Organizational Resources and Capabilities, Using Repository Based KMS**

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The utilisation of technology has been one of the most important factors in facilitating organisations in the management of knowledge (Davenport and Prusak 2000). Knowledge management systems (KMS) based on electronic knowledge repositories have enabled the development and implementation of knowledge management initiatives in organizations whose economic focus is on exploiting existing organizational resources and capabilities in order to sustain competitive advantage.

This paper describes the important role of technology, in the form of knowledge based systems, as a) enablers of knowledge creation, storage, transfer and re-use in organizations, using a codification strategy and b) facilitating communication between experts, using a personalisation approach. It also introduces a current
ongoing study into the perception of KM and KMS among IT professionals in Ireland.

**Keywords:** Knowledge Management, Knowledge Management Systems, Knowledge Repositories, Reuse.

**An Integrated (‘Unitas’) Approach to Knowledge Management Strategy**

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With the emergence of the knowledge era, many researchers advocate that effective knowledge management will be a key competitive weapon in the future and have found in their research that an increasing number of progressive organisations are exploring the potential power of this dynamic field of collective knowledge sharing. This paper focuses on the value of an knowledge activity that of the movement of knowledge best practices across an organisation, an aspect which is not robustly crystallised in currently available literature. The financial services organisation which is the subject of this exploratory case study is focused on developing a customer centric business model and adopting a knowledge based CRM strategic approach. The findings of this exploratory study which shows a correlation between deployment of the knowledge management practices and value creation provides support for the knowledge management value proposition and presents the issues for further reuse.

**Keywords:** Knowledge Strategy, Knowledge Based View (KBV), Duality, Dualism

**Knowledge Creation and Sharing in a Project Team: An Organizational Analysis Based on the Concept of Organizational Relation**

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Managerial literature agrees to declare that nowadays knowledge and intellectual asset management seems to be the appropriate answer in order to be successful.

Moreover, it is stressed that new organizational models call for innovative techniques to manage knowledge, and the traditional approaches based on a "one company perspective" are becoming useless. More frequently the problem is to manage inter-organizational collaborations, projects and temporary structures. Thus, the question is to rethink some classical organizational problems in order to consider the specific characteristics of the knowledge processes within the single or among different organizations.

In this trend, the paper takes into consideration the "Organizational Relational Model" and proposes a methodology for describing and interpreting the interactions among organizational actors, also belonging to different organizations. These
interactions can be defined Organizational Relations (OR): it is possible to analyse them according to different dimensions:

- the goals of the OR and their importance for the organizational actors;
- the technological and organizational tools supporting the OR;
- the organizational rules regulating the behaviour of actors within the OR;
- the cultural background associated to the OR.

The Organizational Relations (OR) have property supporting and improving the organizational effectiveness. Particularly, by recognizing the OR, it is possible to detect some conditions fostering knowledge processes.

It in this paper an application to a successful case of knowledge creation and transfer from the aerospace to health-care field is described. It is described the process leading to the registration of an international patent of a prototype of "bony fixer", for the re-composition of the fractures of the limbs in orthopaedic field. The project represents a success case of technological transfer carried out by the ASI (Space Italian Agency), the Ferrari DTM (Design Technological Material) and the National Healthcare System (the Careggi Hospital of Florence and the Umberto I General Hospital of Rome).

This case points out that the processes of knowledge creation, diffusion, transfer and re-use, in a network of several different organizations, particularly in a inter-organizational project team, could be supported starting from the analysis of the existing Organizational Relations.

**Keywords:** Knowledge creation and sharing, Inter-organizational project team management, Case studies

**Knowledge Creation in Groups: The Value of Cognitive Diversity, Transactive Memory, and Openmindedness Norms**

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This paper contributes to our understanding of the process of knowledge creation in organisations by synthesising contemporary theory across research streams into a comprehensive model of the knowledge creating process in organisational work teams. This paper subsequently develops and empirically investigates hypotheses relating to three factors capable of facilitating the knowledge development process - cognitive diversity, transactional memory and openmindedness norms. In combination, the conceptual rationale and empirical support act to substantiate three key relationships in the knowledge creation process.

Firstly, this research reinforces and delves into the role of diverse cognitions in knowledge creation. Coupled with support for the connection between functional and cognitive diversity, the results substantiate the theory that cross-functional groups have the potential to synthesise knowledge from different functional areas, by allowing members to challenge the blinkered perspectives of different functional areas’ knowledge bases. These findings contribute to a comprehensive understanding of the structural cognitive components underpinning knowledge creation.
Second, this research evidences a positive relationship between transactive memory and knowledge creation, demonstrating that the existence of diverse knowledge is a necessary but not sufficient requirement for knowledge creation, and emphasizing the importance being able to access and utilize such knowledge. Finally, through the results of this study we are able to distinguish some of the specific psychosocial elements conducive to knowledge creation, incorporated in the concept of openmindedness norms. By understanding the architecture of openmindedness norms, we have an enhanced comprehension of the optimum climate for knowledge creation. This provides a useful conceptual platform from which to further investigate the impact of social factors on knowledge creation, and facilitates the identification of interventions with potential to support collaboration and knowledge sharing.

By explicating the processes involved, and specifying and testing critical relationships, this paper builds on the sparse extant research into knowledge creation.

**Keywords:** Knowledge creation, cross-functional teams, cognitive diversity, group dynamics.

**SWITCH ON - Semantic Web Integration Through Converging Hybrid Ontologies**

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In today’s knowledge-intensive organisations the primary objective of ICT is to lead users to information they need when they need it. However, inconsistencies in data/information categorisation have been of concern for many years leading to a number of challenges for organisational change and development, such as knowledge discovery, corporate collaboration and rapid decision making. The Semantic Web is one technology emerging to overcome barriers of limited interactive knowledge sharing and problem solving.

For knowledge to be shared effectively there has to be a degree of computational manipulation of the cybereorp’s data, most of which can now be displayed via web pages. The target of the Semantic Web, an initiative currently being developed by WC3, is to enable this manipulation to happen transparently through Resource Description Framework (RDF). Research (such as Duval et al., 2002) now claims that many of the issues related to poor metadata can be contributed to the use of HTML (Hypertext Mark-Up Language). HTML is the code mostly commonly used for the storage and transmission of current Internet documents. While HTML is an easy to learn/use simple language, well suited for hypertext, multimedia, and the display of small, uncomplicated documents, it has its limits. The rush to make data available across the Web has demonstrated weakness in its structure, mostly in relation to poor metadata assertions and static data presentation. To overcome such difficulties XML is emerging as a more flexible programming language for the Web.
XML will have a huge impact on KM development. This paper examines how XML extends functionality of machines and provides a basis for Semantic Web applications development. The paper builds on an on-going research programme addressing future technological developments within industry. The paper concludes by outlining a prototype application entitled ANSWER.

**Keywords:** Knowledge Management, Semantic Web, Prototype Application

Knowledge Acquisition for Building Lightweight Ontologies

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The engineering of ontologies has always been a bottleneck in the implementation of knowledge-based systems. Currently, in the framework of Semantic Web activities, many research efforts are being dedicated to the task of automatically extracting ontologies from existing resources like text, databases, lexical resources, domain vocabularies, etc. In this context, several techniques relying on machine learning, text mining, or information extraction are being tested and evaluated.

Whereas for some Semantic Web applications such automatically extracted ontologies could be good enough, more demanding applications (as it is often the case with organizational knowledge management) would always require some degree of human knowledge engineering efforts. Therefore, an important research challenge is trying to decrease the amount of such efforts by combining principled modeling techniques with automatic knowledge acquisition methods.

A valuable source of principled knowledge modeling techniques is found in the comprehensive CommonKADS methodology, especially in its detailed catalog of template knowledge models. In addition, the notion of domain independent knowledge roles facilitates the reuse of such templates for specific domain dependent tasks.

Our idea is to use the knowledge roles terminology of CommonKADS to semi-automatically annotate domain knowledge sources (for example, text documents). To demonstrate our approach, we build a lightweight ontology for a knowledge management application in the domain of predictive maintenance for rotating electrical machines. We first use the terminology of CommonKADS to define a knowledge model for the task of predictive maintenance by combining and reusing the diagnosis and monitoring knowledge templates expressed in terms of several knowledge roles. Then, we adopt an active learning strategy that will annotate a corpus of text documents with knowledge roles, while keeping the number of instances to be labeled by the user low. The annotated expressions are then extracted and clustered to build the lightweight ontology.

**Keywords:** knowledge acquisition, CommonKADS, lightweight ontologies, active learning, semantic annotation, predictive maintenance.
Towards the Development of a Conceptual Framework for Knowledge Enhanced e-Workflow Modelling

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Workflow management systems are an important information technology in terms of their uptake and application, which seeks to automate and drive the storage, processing and distribution of documents between participants and, in so doing radically improve the performance of clerical and administrative processes. However, the traditional workflow metaphor, which focuses on the management of information and work processes, is increasingly inadequate in the internet or e-business era that is often characterised by an increasing pace of radical and unforeseen change in the e-business environment. It has also ignored the human dimension of organisational knowledge creation. This paper presents a framework for the development of workflows which considers the management of work processes, information, social aspects such as organisational and personal knowledge, skills, motivation, experience and quality aspects as well as being Internet-aware in service delivery to customers.

Keywords: Workflow, e-workflow, knowledge Management, e-business, Adaptability.

Communicative Action in Intellectual Capital Creation: An Empirical Test

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Intellectual capital, which has yet to be adequately conceptualised, is viewed here as a complex dynamic process of situated collective knowing that is capable of being leveraged into economic and social value. Knowledge creation and sharing mechanisms are generally perceived to be central to understanding this complex form of intangible value. In previous theoretical work we have claimed that the social philosophy and social theory of Jürgen Habermas provides a point of departure of sufficient theoretical sophistication to possibly enhance our thinking and understanding in this field. The main focus in this research stream is on the quality of critically constructive dialogue, which we term critical appraisal norms (CAN), within knowing-intensive organisational settings. The quality of such dialogue, insofar as it is measured by the procedural properties of its process of generation, is an empirical variable.

We provide some empirical support for this theoretical strategy here. Drawing on perceptual data from senior financial executives in the knowing-intensive Irish ICT sector we explore, using structural equation models, the relationships between Critical Appraisal Norms, Knowledge Creation, Knowledge Sharing, Organisational Capital, and Management Leadership. Notwithstanding the limitations of our
research design, we find that the Critical Appraisal Norms (CAN) construct, which draws on the procedural properties of Habermas’ conceptualisation of communicative action, provides statistically significant explanatory power in addressing both knowledge creation and knowledge sharing. CAN is associated positively and significantly, both directly and indirectly, with knowledge creation - and with the broader process of intellectual capital creation. Some implications for the fields of knowledge management and intellectual capital are then briefly discussed.

**Keywords:** communicative action; critical appraisal norms (CAN); Habermas; intellectual capital creation; knowledge creation; knowledge sharing; management leadership

The Paradox of Sharing Knowledge Despite Providing Incomplete Information Using a Visual Format: The Example of IT Strategy

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Chief Information Officer and similarly titled positions are expected to produce an IT strategy for the organisation. Usually the resulting document is a substantial piece of work delineating the business priorities, governance arrangements, IT capabilities and key IT direction for a three to five year period. There is a substantial practitioner and academic literature which supports this approach. In this context awareness of the intricate detail can be regarded as knowledge. A Knowledge Management (KM) approach is used firstly to question whether the IT strategy as a codified document is sustainable, and, secondly, to determine where the IT strategy is situated in the traditional hierarchy of data, information and knowledge. A case study is used to discover whether an IT strategy in this form will be of use to an organisation which had previously both produced its own IT Strategy and commissioned consultants to prepare a draft IT strategy. IT and business unit senior managers rejected the proposed detail. Without forewarning the key elements were reformulated in a visual summary which omitted detail. Informants reaction to the strategy was noted. Despite the lack of detail informants showed strong recall and a direct focus on its relevance to them which made redundant any engagement with the supporting detail. These findings are interpreted using the construct of the I-Space (Boisot). A follow-up confirmed its re-use in a variety of IT situations not encompassed by circumstances under which the original IT Strategy was produced.

**Keywords:** Chief Information Officer; Data; Governance; IT Strategy; Knowledge; Knowledge Management;

Trust and Knowledge Management in the Construction Industry

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The UK construction industry is a strong, knowledge-based industry that relies greatly on the knowledge contribution of diverse participants in a project team. The intricacies involved in projects from conception to delivery reveal that a lot of
knowledge interplay is employed between the parties involved. The finished construction is largely non-transportable and generally it is assembled at the point of use, usually outside. This requires construction organisations to set up temporary organisational structures at dispersed geographical locations, frequently at a distance from central management, creating one of the most challenging environments in which to manage people effectively in order to ensure that they contribute their knowledge to organisational success. There are also real and perceived low levels of trust amongst the clients and other members of the construction team. This heightens the level of conflicts in projects and business arrangements, ultimately impacting upon the exchange of knowledge and sharing of competencies. Such features present an antithetical picture to the critical success factors portrayed in current knowledge management (KM) literature – effective management of trust for KM success. The creation of trust has been called the most vital prerequisite of knowledge exchange because trust gives the emotional safety needed for knowledge sharing. Without trust, any initiatives can fail, even if the survival of the organisation depends on it. There is a need to integrate and promote human resource (HR) aspects of KM within any organisation if such initiatives are to succeed. Organisations do not create knowledge rather it is the employees within the organisation that create knowledge and HR aspects of KM can be capitalised upon to bolster organisational knowledge. This paper presents some of the findings and results of an on-going study on human resource management (HRM) for improved KM. There is a need to explore and improve our understanding of what shapes the willingness (or reluctance) of employees to share their knowledge and one of such important factors is trust. The different types of authority which are the bases of trust are identified. This paper also considers the violation of psychological contract and its effect on trust. This type of infringements is most likely to impact upon employees’ conduct in response to organisational attempts to manage careers, reward and commitment. Furthermore, the contravention of a psychological contract is likely to result in the aggrieved party withholding their willingness to ‘go the extra mile’ for the other. The strategic importance of retaining knowledgeable employees is emphasised as a characteristic of successful KM in organisations. Such employees have established their knowledge over a long period of time and their replacement is usually extremely costly. The issue of knowledge hoarding is also explored. This paper concludes with the recommendation that employees should be managed in such a way that they would recognise the incremental value of knowledge. Managing employees to achieve this will entail a deviation from the traditional way of ‘controlling’ employees to ‘co-ordinating’ with them.

**Keywords:** Human Resource Management, Knowledge Management, Psychological Contract, Retention, Trust

**A Sociotechnical Based KM Solution for Service and Support**

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In recent years there has been a remarkable increase in knowledge management (KM) initiatives. Knowing and sharing the knowledge available within an organisation has become a critical success factor. This trend has culminated in the
development of various KM frameworks and strategies. However, organisations KM initiatives are failing due to a particular focus on either managing the technology or managing the human resource. Current literature states to achieve success a sociotechnical view of knowledge is essential.

The objective of this paper is to demonstrate how an encompassing and comprehensive sociotechnical based KM approach enables effective knowledge sharing in the workplace for organisations to acquire and retain intellectual capital. The sociotechnical perspective to KM, interfacing social and technical issues, is informed by a five–component sociotechnical principle: people, role (i.e. contextual tasks), organisational structure (i.e. culture, strategy, leadership etc.), technology (e.g., knowledge management systems) and the environment.

To contribute to the stream of research on KM, this paper explores a KM initiative, in a major UK telecommunications company, from a sociotechnical perspective. An ethnographic case study methodology in conjunction with contextual design techniques was used and is presented in this paper. This paper also illustrates and discusses how the sociotechnical approach enables effective organisational knowledge sharing for service and support in light of the case study. The research shows that a sociotechnical based KM solution is a key success factor for the company in its service and support strategy for sustainable competitive edge.

Keywords: Knowledge management, sociotechnical KM framework, organisational knowledge sharing, knowledge management systems (KMS).

The Applicability of Knowledge Management as an Aid to Pharmaceutical Innovation

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Knowledge Management (KM) is a powerful strategic tool designed to capture, disseminate and exploit knowledge within an organisation. We witness that the use of knowledge drives innovation, which in turn allows the creation of value. Enhancing this process within the pharmaceutical industry is a common goal of industrial research and one that the authors believe KM may address. The following case study based paper analyses the role of knowledge within a multi national pharmaceutical R&D organisation. The authors discuss the factors that drive innovation, concentrating on the use of knowledge sources and the affect collaborative activity has on such work. The findings indicate that innovation occurs through a process of chance, which may be enhanced by forming a solid social network around the key innovators to increase the probability of knowledge acquisition. The authors conclude by suggesting a KM based tool with which to guide this process and ultimately increase the likelihood of innovation.

Keywords: Knowledge Management; Innovation; Collaboration; Pharmaceutical R&D.
A Prototype Knowledge Management Platform for Modern Rural Energy Services in Thailand

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The rapid advance of ICT has improved communication and enabled the acquisition of diverse types of information and data. ICT has now been established as an invaluable tool to assist the promotion of knowledge management and related activities. Recent developments of Internet and Web technologies have opened up numerous new applications for the development of Knowledge Management Systems in many organizations. On the other hand, KM applications have not been utilized extensively in science and engineering disciplines. The possible reasons can be due to the complexity of the nature of the problem and the lack of understanding. In Thailand, the Modern Rural Energy Service (MRES) is a specialized sector servicing the rural areas in meeting their needs of electrical power. The sector relies on knowledge derived from the analysis, design, planning, implementation and maintenance of electrical systems based on renewable and traditional energy sources. The main objective of the deployment of high efficiency MRES in rural areas is to improve the quality of life and elevation of economic advantages. While the objectives and aims of the projects are clear and many projects have been initiated, there still exist many practical problems that hinder the success of the projects. Examples of the reasons are - high turnover of experts and specialists; lack of in depth knowledge on the system among the local users; high cost of the system, tools and equipment; and limited budget for planning, research and development. In order to overcome the above issues, KMS has been identified as a viable solution. This proposed research is to develop a prototype KMS platform to be used by the stakeholders for the gathering, sharing, extraction and dissemination of knowledge on MRES. The expected users and contributors to this system are the relevant government departments, utility companies, academic institutes and local administrator. This paper will present an overview of the proposed research and the important features of the prototype.

Keywords: Modern Rural Energy Service (MRES), Knowledge Management System (KMS)

Competitive Intelligence and Co-evolution within an Organisation Population

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The phenomenon under study is the co-evolution of organisations and the effects that competitive intelligence operations have on it. Competitive intelligence aims at acquiring relevant and accurate knowledge of the actions and plans of competitors on which managers can base their decisions. The fundamental objective is to survive and succeed in a competitive environment. As an organisation strives to know more of the actions and plans of its competitors, and act on that knowledge,
the actions and plans of that organisation function as valuable new knowledge for other organisations that strive to know more about their competitors.

It is assumed that competitive intelligence is an important driver of co-evolution. The objective of this study is to examine the consequences that CI operations have on the development of a competitive organisation population. Research questions are defined as follows.
1. What are the objectives of CI operations?
2. What are the results of CI operations?
3. What is the role of co-evolution in the development of an organisation population?
4. What are the consequences of the organisation level CI operations on the population level development?

These questions are examined based on a literature review on current CI articles as well as an investigation of co-evolution in the fields of complexity and evolutionary economics. Co-evolution may lead to The Red Queen effect, where the improvement by all the actors leads to higher standards of performance leaving the actors forced to continuous improvement efforts just to keep their relative position. Co-evolution may also lead to emergence which means that the population level outcomes are unpredictable based on organisation level motives and actions. It is concluded that knowledge is the most important trigger of co-evolutionary behaviour, and that efficient CI operations lead to faster industry development and homogeneity within an industry.

**Keywords:** competitive intelligence, co-evolution, organisation population

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**Healthcare Intellectual Capital: A Framework of Analysis at the Hospital Level and the Alliance Level**

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Intellectual capital has been recognized as an important source for maintaining sustainable competitive advantages and creating value for a firm. Current research pertaining to intellectual capital mainly focuses on individual-level and firm-level analysis, and addresses the attributes, acquisition, accumulation, creation, sharing, transformation, combination and application of intellectual capital. However, less attention has been paid to alliance-level analysis. In the era of alliance proliferation, not only do firms accumulate intellectual capital inside the boundaries of firms but also acquire valuable resources externally. This proposal attempts to develop an analytical framework, exploring the intellectual capital embeddedness, management, and performance at both firm and alliance levels. In the strategic management realm, the concept of intellectual capital has been one of the dominant issues. In western countries, the intellectual capital perspective has been widely applied to research in knowledge-intensive industry. The Taiwan healthcare industry, characterized as a highly knowledge-intensive industry, has been selected as the research setting in this study. We preliminarily design a questionnaire with a
multi-item survey to capture the measurements of intellectual capital, management mechanisms, and performance. These items are further verified by the Delphi method and by an in-depth case study. Linking an intellectual capital perspective with a strategic alliance concept, we develop healthcare-related intellectual capital which is demonstrated by two dimensions, each with three elements: (1) individual-embedded, hospital-embedded, and alliance-embedded intellectual capital, and (2) human, organizational, and relational capital. In addition, we propose possible management mechanisms that can be used by hospitals as well as by alliances. Also, intellectual performance can be categorized as hospital performance and alliance performance. As can be expected, this study contributes to more valuable insights into knowledge management in healthcare organizations and alliances.

**Keywords:** Intellectual capital, strategic alliance, intellectual capital management, healthcare industry

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**Measuring the Performance of Cooperative Strategies With a Competitor: An Intellectual Capital Perspective of a Case Study in Taiwan**

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Forming strategic alliances with competitors has become a heated issue, not only in practice but also in academic research. Interorganizational partnership is considered a major source for a firm to access critical resources and to generate performance. In order to achieve collective goals of a strategic alliance, firms involved in the alliance should dedicate their knowledge, skills, technology, and other valuable resources to create performance. Drawing from an intellectual capital perspective, this paper attempts to answer three questions: How does a firm contribute its intellectual capital to cooperate with its competitor? What are the elements of cooperative strategies with competitors? And how does a firm measure cooperative performance? In this study, we have investigated a focal company, the Sinon Co., in the supermarket industry in Taiwan. The Sinon Co. currently owns thirty-two chain stores and has formed a strategic alliance with thirteen other companies. One of the strategic partners is Sinon’s major competitor which owns two hundreds and eleven chain stores. In order to collect qualitative data, we conducted an in-depth face-to-face interview with fourteen CEOs in the strategic alliance. Of the respondents, two CEOs were from Japanese companies and twelve CEOs were from Taiwanese companies. They, together, have defined five key cooperative strategies and critical indicators for measuring cooperative performance. As well, we have developed important intellectual capital which is necessary for implementation of those cooperative strategies. The five key cooperative strategies include co-procurement, co-marketing, co-distribution, chain store co-management, and an integrated information system. Using this practice-oriented study, we show detailed items of intellectual capital, elements of key cooperative strategies, and relevant indicators of cooperative performance in the supermarket industry. Hopefully, this study will contribute a more complete
exploration of intellectual capital, cooperative strategy, and performance measurement in practice as well as in research.

**Keywords:** intellectual capital, strategic alliance, cooperative strategy, performance measurement

**Competitive Intelligence an Exploratory Study**

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This importance of Competitive Intelligence – CI – is in the capacity to conceive competitive intelligence advantage towards organizations, being prudent to be considering it as a complex organizational process. This evolution of competitive intelligence is translated by a development (i) of relevant concepts, (ii) of competitive intelligence programs, (iii) of methods of CI measurement, (iv) of models and process to explain and to define the CI process in organizations. The research description in this article contends to approach the way the research and teaching are challenging and changing beliefs of competitive intelligence. This paper approaches the development of professional’s practices that are at the root of the construction of the best practices to develop and to measure the impact of CI in organizations. This article also describes the discourse used in CI, as to permit identifying the key dimensions of it, the used taxonomies, the process and models that guide the CI initiatives and the methodologies developed to measurement it in organization. This discourses were identified in articles of the area, gathered in a literature review at academics periodics such as: Competitive Intelligence Review; The Journal of Competitive Intelligence and Management, Mis Quarterly; in the articles produced in conferences such as: SCIP's Annual International Conference, Annual Structuring Competitive Intelligence for Greater [...], International Conference Information Systems – ICIS; and in the sites organized through enterprise and professional sites as: www.scip.org; www.outwardinsights.com; www.apqc.org. As final considerations we point out the need for future research where there is a greater interaction between the academy and the professionals, in the development of research project and teaching to define the best practices in CI, based in models constructed through professional’s daily actuation. That interaction can being advantages such as: development of multidisciplinary projects targeted to improve the quality of decision making; the execution of studies about the impact of the organizational culture on CI, addressing aspects such as human resources motivation, social relationship, organizational credibility and confiability; and the identification of key factors that permit the sustainable development of organization in terms the CI.

**Keywords:** competitive intelligence - study, research and teaching in CI.
A Framework for Characterizing Knowledge Management Systems

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Knowledge management systems (KMS) are automated tools that contribute to improve the use of knowledge in organizations. The aim of KMS is to support knowledge management (KM) processes, enhancing competitiveness through the use of organizational knowledge. There are four main KM processes that KMS need to support: knowledge creation, storage and retrieval, transfer and application. On the other hand, intellectual capital (IC) is the set of intangible assets that can create wealth in organizations, including processes, technologies, patents, employee’s skills and relationships. It measurement reflects the influence and the economic impact of knowledge in the organizations. A systematization of IC measurement models was made with the purpose of identifying the main components used to measure IC.

Organizational knowledge is created through combination, internalization, socialization and externalization cycles, between the tacit and explicit dimensions of knowledge (Nonaka and Takeuchi 1995). Knowledge conversion from one form to another occurs frequently and leads to the creation of new knowledge. This dynamic process of knowledge conversion is based on knowledge flows across individuals, groups and organizations.

This paper presents a framework for characterizing KMS. The framework describes the potential role of KMS in facilitating and supporting KM processes, in supporting knowledge conversion cycles that enable knowledge creation, and in measuring knowledge assets. The framework can be used to analyze the role of KMS in enabling and supporting knowledge flows and processes, and to identify capabilities related with IC measurement.

A review of KMS classifications was made to identify their underlying assumptions and purposes, and to highlight the different categories that are normally used to classify KMS. From this review it was noted that almost all KMS do not present functionalities related with the IC measurement. The exceptions are some competence management and customer relationship management systems that include some functionalities to measure, respectively, human and customer capital.

The framework for characterizing KMS, its usage and benefits are described. The framework is used to classify and characterize the KMS categories reviewed in this paper, in three perspectives: KM processes supported, IC components measured and knowledge conversion cycles supported.

Keywords: knowledge management systems, knowledge management, intellectual capital
Measurement of Business Intelligence in a Finnish Telecommunications Company

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Business intelligence (BI) is a managerial concept and tool that is used in order to help organisations to manage business information and to make more effective business decisions. BI activities produce up-to-date information for both operative and strategic decision-making. The term BI refers to various processes, products, techniques or tools to support the making of faster and better decisions.

There are two main reasons for measuring BI: the valuation of BI in order to prove that it is worth the effort and the measurement of BI activities in order to help manage a BI process. According to recent studies, there are many potential ways to measure BI but only few organisations are actually measuring it. Thus, measurement is generally considered an important aspect of BI but at the same time it is considered difficult to carry out in practice.

Currently, there is a lack of research on the measurement of BI. In particular, there are hardly any empirical academic research papers available. Moreover, there is only little normative literature which directly recommends how to measure BI. The first aim of the paper is to discuss how BI can be measured and to identify what types of measures are available in the literature. The second objective of the paper is to describe the measurement of BI in one case company. All in all, the paper aims to describe the current knowledge regarding the measurement of BI and to make a contribution on the currently small amount of empirical knowledge on the topic. The research is implemented by means of a literature review and action research.

Keywords: Management of Business Intelligence, Measurement, Measure, Case Study, Telecommunications

The Impact of Organisational Bureaucracy on the Determinants of Knowledge Acquisition

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In his book PowerShift, Toffler (1990) made it clear that knowledge has become the global competitive driver. Given that 42 percent of corporate knowledge is held within employee’s minds (Clark & Rollo, 2001) it is important for organisations to set up work structures and processes whereby tacit knowledge is easily accessible from domain experts and people are connected to think together and share information (Lang, 2001). It is being argued that if an organisational structure reduces ambiguity for employees and clarifies concerns such as “What am I supposed to do?” “How am I supposed to do it?” “To whom do I report?” and “Whom do I go if I have a problem?” it shapes their attitudes and facilitates and motivates them to higher levels of performance (Robbins, 2003). Of course,
structure also constrains employees to the extent that it limits and controls what they do. Some researchers suggest that organisational structures and hence bureaucracies frustrate participants (Adler & Borys, 1996; Hirschhorn, 1997). Others have reported that structures provide management the foundation to prescribe or restrict the behaviour of organisational members (Dalton, et al. 1980).

Despite the increased interest in studying the influence of structures on organisational outcomes, Robbins (2003) argues that “the research on the relationship between many structural variables and subsequent levels of performance or job satisfaction is far from consistent” (p. 447) and the studies examining the relationship between the characteristics of bureaucracy and knowledge management/acquisition are inconclusive. The research reported in this paper investigates the relationship between the dimensions of bureaucracy measured by Hall’s (1961) 62-item survey instrument and the dimensions of knowledge acquisition measured by Mykytyn, Mykytyn and Raja’s (1994) 26-skill/trait instrument.

Questionnaires containing items measuring the dimensions of bureaucracy and the determinants of knowledge acquisition were distributed to 168 employees (useable returns were 129) from a public utilities (electricity and water) organisation operating in the United Arab Emirates. These were subjected to a series of correlational and regression analyses. The findings indicate that the dimensions of bureaucracy with mean scores lying between the high end of “disagree” to the lower end of “neutral” (lower bureaucracy) tend to correlate stronger and more positive with the determinants of knowledge acquisition compared to those with mean scores lying between the high end of “neutral” to the lower end of “agree” (higher bureaucracy). Theoretical implications and practical applications of these findings are discussed.

**Keywords:** knowledge acquisition, knowledge worker, organisational bureaucracy, organisational structure, self-managing teams

**The Requirement for Management of Knowledge Concerning the Assessment of Intellectual Capital**

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Intellectual capital (IC) is a key strategic asset of the modern organization and a major – if not the only – sustainable source of competitive advantage. It is estimated that “spending on intangible assets like research and development and employee education results in a return eight times greater than an equal investment in new plants and equipment”.

Existing literature propagates a variety of methods for assessment of intellectual capital. Unfortunately, awareness of and interest in the assessment of intellectual capital far exceeds its use in practice. Why are so few companies actively managing and assessing their intellectual capital?
Despite an overwhelming and ever-growing amount of existing literature on knowledge management and on intellectual capital and methods for assessment thereof, the selection and implementation of such methods do not appear to have become any easier. No single method suits all circumstances. The appropriateness of assessment methods – and of specific implementations of such methods – depends on factors such as:

- purpose of and motivation for assessment;
- context, goals, objectives and critical success factors of organization;
- industry and line of business;
- level of assessment; and
- level of resources the organization is willing to commit.

Further adding to the complexity is the intra-method choices to be made during design and implementation.

This paper argues that, due to the complexities involved in selecting and implementing an appropriate method or combination of methods for assessing intellectual capital, knowledge management support systems are needed for managing the evolving body of knowledge concerning such assessment.

**Keywords:** Intellectual capital, intangible assets, methods of assessment, complexity of choice, knowledge management support systems, decision support systems

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**The Organizational Mind: A Comprehensive Framework for the Intelligent Organization**

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The paper describes an overall view of the organizational mind concept. Our claim is that this concept may become a sound theoretical basis for the development of an useful framework to assist the study of how collective experience is understood and memorized, highlighting the events and objects that organizations choose to pay attention to. It assists also in understanding the language elements upon which the organizational experience is constructed and what processes enable organizations to reason about that experience. However, this is a very complex concept that cannot be tackled in only one research project but in several multidisciplinary and focussed projects. The first research project is starting at the Information Systems Department of the University of Minho (Portugal) and it focuses on one of the aspects of the organizational mind: the self- and meta-representation capabilities of the organization.

**Keywords:** knowledge management, organizational mind, organizational intelligence, organizational well-being
Opportunities and Challenges for Collaborative Task Management Based on Enterprise Services Architecture

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Globalization, increased speed of change, and growing competition are crucial factors in today’s business. These challenges require more flexibility in the organization of work and resources. SAP Enterprise Services Architecture (ESA) is a new paradigm that allows organizations to leverage existing software to provide new internal and customer facing applications. It is its vision to deliver an architecture that enables companies to build, change and expand business processes in a more efficient and flexible way. Related to ESA is the SAP Business Process Management (BPM) that supports knowledge intensive and collaborative tasks aiming at increased transparency, accountability and actuality. A solution striving for these goals must be closely adapted to the way how people organize their work. The new approach essentially affects the way in which knowledge is handled in an organization. In the present paper we take a knowledge management point of view, focusing on the concept of collaborative tasks. From this point of view we investigate the opportunities and challenges of ESA. It is discussed to which extent ESA opens new needs for an enhanced task management, proposing an extensive recourse to accumulated task data.

**Keywords:** Knowledge Service Oriented Architecture, Enterprise Services Architecture, Knowledge Management, Knowledge Work, Task Management, Business Process Management

Absorptive Capacity for R&D Results: What Types of Knowledge Drive it?

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Nowadays, to gain and maintain competitive advantage in the global markets the enterprises require to develop continuous innovations in products, processes and organisational structure. There is an important number of small and medium sized enterprises that are not able to develop research and technological development activities by their own due to lack of resources. For this reason, this kind of enterprises has to use other instruments like technological cooperation or acquisition of external R&D knowledge. By the other hand, also many other organizations with effective internal R&D activities might complement their own potentiality by means of the absorption of results of R&D external activities.

Having in mind all this, the present paper present the results of a research project related with technological innovation and the developed model that is based on the identification of the relevant types of knowledge that act as drivers of the intellectual capital in the absorption of results of external R&D activities.

This model has been developed through four different phases. The first one aims at the classification of factors that act as drivers of the absorptive capacity in accordance with the different categories of Intellectual Capital. Furthermore an
expert panel of managers has carried out for the model’s qualitative validation. Then the list of knowledge types has been restructured in a comparatively simple model containing a reduced number of factors. In a further step, it has been carried out a quantitative validation of the model by means of a survey carried out in the Territory of Biscay (Basque Country, Spain) on a sample of firms with more than 10 employees. This has led to evaluate the importance of the knowledge factors that had been identified previously and to the definition of four clusters of enterprises. These clusters distinguish from each other by its different attitude regarding to innovation, technology and its capacity of absorption of external R&D.

**Keywords:** Knowledge drivers, intellectual capital, absorptive capacity, R&D transference, enterprise innovation.

**A Conceptual Framework for the Use of Customer Knowledge in Business-to-Business Markets**

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In the past decade, numerous companies have invested heavily in CRM systems and similar information tools to gather, store, analyze, and share individual, customer knowledge (CK) within a company with the intention of making better marketing decisions. However, the most difficult challenge is integrating CK that resides in a company into a company’s everyday marketing operations and processes, such as direct marketing activities or customer service situations. According to several studies, the effective use of CK residing in a company, in particular in the context of marketing decisions, is still at the very early stage in many companies. This research aims at extending the current understanding of the use of CK in business-to-business markets.

In this research, literature from market orientation, organizational behavior, relationship marketing, Customer Relationship Management (CRM), and Knowledge Management (KM), and the pilot case study are used to conceptualize and propose the construct for CK utilization. This research focuses on studying the actual use of CK generated from different functional areas of a company, and during interaction with customers in the context of business-to-business markets, and in the buyer-seller relationship in the marketing decision making process.

The authors propose a conceptual framework for customer knowledge (CK) utilization, and its outcomes in the business-to-business markets. They view the construct of CK utilization as a dynamic, latent multidimensional construct. In addition, the authors propose that two types of CK utilization: conceptual and instrumental, work as mediators between the use of CK and outcomes of CK use. Instrumental use of CK refers to direct application of CK in marketing decisions such as customer service situation, whereas conceptual use of CK refers to using CK generated to support strategic marketing decision making such as supporting the development of new products and services or communication strategies.
Keywords: Customer Knowledge, knowledge utilization, business-to-business marketing

Developing Strategic Communication Strategies for Cultivating Communities of Practice

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This paper lays the groundwork for building a communication model that will help cultivate communities of practice through the use of strategic communications. Theoretical models describing communities of practice in organizational knowledge generation typically have three main actors; the individual, the community and the organization. These models usually mention the necessity for their interaction, but are never specific about how this should be done. Furthermore, there has been little research on how communication processes can affect the relationship between the three actors in the model. This paper proposes that the interaction between the community, the individual members of the community and the organization must be facilitated and promoted through specific strategic communications in order to guarantee the success of the community. Topics such as knowledge sharing, knowledge building and organizational learning are looked at through a communication perspective.

Keywords: Communities of practice, communication strategy, knowledge sharing, organizational learning

Knowledge Management Tools to Embed the Logic of Human Capital Analysis Within the Financial Markets: An Open Systems Approach

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In previous research, the authors have identified benefits of an expert system for securities analysts and fund managers in human capital analysis, described the implications for finance industry regulators, and presented an awareness-based knowledge management/sharing model to represent the business processes involved in a human capital approach to the investment process. In this paper the authors describe the change management interventions required to ensure the inclusion of qualitative assessment of human capital as part of the process by which finance professionals make investment decisions. Due to the urgency required, the regulatory body in Australia, the Australian Securities and Investment Commission (ASIC) can assist in the knowledge management/change management process through regulation of licensing policies. To assist the change management process, the development and refinement of specific tools of human capital analysis gained from a decade of research, and recent field research in dealing rooms in Australia and Asia, among traders, fund managers and analysts, have been applied. The real time application of these tools in the financial markets assists in bridging the knowledge gap in assessing management quality in listed
companies. The tools include the development of a systemic based human capital wheel and a human capital SWOT tool as well as the refinement of the macro level model of the drivers of human capital, and the human capital rating system. These enable human capital analysts to work directly or indirectly with finance professionals, to embed the logic of human capital analysis within the work practices of the financial markets.

**Keywords:** knowledge sharing; change management; human capital analysis; finance industry; finance industry regulation.

The Impact of Knowledge Sharing on Corporate Culture: An Outlook on Small and Medium-Sized Enterprises (SMEs)

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In recent years the concepts of knowledge management and corporate culture have often been in the centre of research projects aiming at SMEs. However, this paper looks at the interface between both potential competitive advantages from a different angle. The author argues that the extent of knowledge sharing within a small and medium-sized enterprise (SME) has an impact on the corporate culture with regard to the strength of employee motivation and the tendency towards collectivism. To be more precise, this project aims at testing the following hypothesis:

*The greater the knowledge transferred from a boss to the subordinates within a small company, the stronger is the organisation’s tendency towards a collectivist approach rather than an individualist approach to its objectives, and the higher is the employees’ motivation to fulfil their tasks within the organisation.*

This hypothesis has been tested quantitatively in the framework of a survey on three small companies from different sectors. Their employees filled out a self-administered questionnaire investigating the three variables “knowledge”, “collectivism” and “motivation”. To make the abstract variables measurable, they have been assigned values ranging from 1 to 4, reflected in a Likert-style rating scale in the questionnaire. The analysis of the primary data has proven the hypothesis to be correct. In other words, in the framework of the survey the extent of knowledge transfer is positively correlated with employee motivation and collectivism.

On the basis of these research findings the paper draws two conclusions. First, for this survey, current theories, which consider employees as “complex men”, can be extended by the motivation factor “knowledge”. Consequently, to increase employee motivation, all three research participants have to base their corporate culture on the assumption that human nature is reflected in the picture of man as a “complex man”, who is motivated by many needs, among which there is the need for knowledge. Second, the research participants with a greater collectivist-orientation obviously demonstrate greater knowledge transfer from superiors to subordinates. As employees are motivated by the quantity of knowledge available,
the research participants would enhance employee motivation further, if they promoted collectivism within the company to a greater extent.

**Keywords:** knowledge sharing, corporate culture, employee motivation, collectivism, small and medium-sized enterprises (SMEs)

**Knowledge Management in a Brazilian Engineering and Construction Company**

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Knowledge has become a very important asset to the modern organizations. It is the main resource used by all of them. According to this fact, knowledge is more valuable and powerful asset than any other physical or financial asset. This text intends to show a Case Study about a Knowledge Management Methodology developed and managed by the author in a Brazilian Engineering and Construction Company. The aim of this methodology was to structure knowledge management concepts and disseminate them to the many areas of this company. This article describes the most important concepts used by this company that seeks, according to their experience and expertise, the necessary knowledge to develop new projects, services and products. It is shown how the creation, codification and dissemination processes can be very important for the survival of this company that intend to improve its market share in Engineering and Construction. It’s also interesting to describe that the Knowledge Management Methodology was born only after a company restructuring that caused the creation of a Directory that became responsible for keep certain unification in the company and for the dissemination of technical best practices.

**Keywords:** knowledge, management, engineering, construction

**Supporting the Elicitation of Real Customer Needs Through Customer Knowledge Management for Innovation**

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Systematic and in-depth customer knowledge management (CKM) substantially improves an organization’s competitiveness, effectiveness and innovative ability. As such it is crucial for success in corporate environments that have a strategic focus on an increasing innovation of products and services.

CKM aims at a high customer satisfaction and retention by preserving and utilizing the whole body of knowledge that is growing up in the relationship to the customers - by experience, studies and customer communications. I.e., in contrast to "customer driven" or "market driven" approaches which respond to what customers say they need and want, CKM is to exploit knowledge about and gained from a customer in order to provide him/her with products or services that even will exceed his/her expectations.
In order to achieve this at competitive costs, effective information system support for CKM is required. It should be clear that systems which are to provide such a support should be able to deal with and to integrate quite different sources and kinds of information: qualitative as well as quantitative, structured as well as unstructured, explicit as well as implicit. Combining such information in a targeted and transparent fashion then will help to supply decision makers with optimal assistance.

The emphasis of this paper lies on the presentation of elicitation strategies for gaining customer knowledge and sharing it at work in order to enable continuous innovation and to improve organizational performance.

The proof of concept will be given by means of a concrete example, namely the integration of customer knowledge into the innovation process of an internationally successful system supplier company which produces OEM components in technical optics, medical technology and semi-conductor industry.

**Keywords:** Customer Knowledge Management, Innovation, Information System Support, Project Experience

**Competence Upgrades by Knowledge Transfer in Networks of Excellence**

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The growth of knowledge and competence is limited by the available resources. Therefore the development of the networks of excellence and competence was promoted by the scientific community, the public organisations, and the private enterprises to improve the knowledge integration or sharing by networking. But the realisation of the knowledge transfer in networks implies the development and implementation of methodology, technology, procedures as well as related tools and services. Assuming the trans-disciplinary approach as bases for the following integration of the knowledge from different fields it is possible to organise the corporation for the repetitive upgrading of knowledge and competences in the networks. The development of such kinds of competence upgrading networks is characterised by deductive and inductive procedures. After analysing the knowledge and competence level in the organisations the essential measures will be derived as the first deductive step. The results and effects of the different measures will be used for generalising the cognitions in order to adopt and adapt the methods, technologies, procedures, tools, and knowledge to other organisations in the network.

This theoretical approach will be explained by practical examples of creating competence upgrading in networks of competence and excellence supported by web-based knowledge transfer. After beginning with the special field of factory information systems the first national and later European network of competence was created. After the upgrade of the knowledge and the competences in the international networks the developed methodology, technology, and procedures were improved and applied for generating the European media competence project
culminating in the next competence upgrade. The accumulated knowledge was used for creating other upgrades such as market and business competence, technology transfer systems, knowledge and educational markets and portals, etc. Each new loop was characterised by knowledge transfer within the growing network systems of excellence inducing the competence upgrades.

**Keywords:** competence upgrades, knowledge transfer, networks of excellence, networks of competence, web based training

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**Knowledge Management and Management Theory: An Analysis of Sullivan’s Conceptualisation of Knowledge Within Organisations**

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Knowledge management is an important theme within management theory, because the processes of knowledge management are exercised when managers’ are required to manage intellectual property. This paper examines theoretical models of the management of intellectual property collaborative structures. The role of new knowledge within organisations suggests that, while managers have always been involved in managing explicit knowledge, there are new demands upon managers that require new competencies. These competencies include the ability to lever knowledge strategically and competitively, especially by managers who work in the specialized activities of R&D.

This paper examines the main themes in the management literature, to highlight the theoretical gaps in this literature with respect to knowledge management. This analysis draws from management theory, those conceptual relationships that are important in theorising knowledge management. The paper focuses on the contribution of human capital to knowledge management, by exploring the management of intellectual property.

Each period in the development of management theory has a literature that contains the contributions to our understanding of knowledge management. The connections between these literatures provide an historical path of theoretical development concerning knowledge within organizations. The issues emerging from this analysis assists in understanding the role of human capital in developing knowledge within organisations. This theoretical analysis is important for understanding the broader relationship between knowledge, the new economy, and the role of intellectual property in contemporary organisations. The paper examines five main stages of management theory in analysing Sullivans’ model of human capital and the formation of knowledge within organisations. The paper provides a critique of Sullivan’s theoretical conceptualisations of knowledge management.

**Keywords:** Commercialisation, human capital, intellectual property, knowledge economy, knowledge management.
The Role of KIBS in the IC Development of Regional Clusters

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In this theoretical paper, the concept of knowledge-intensive business services (KIBS) is applied to the analysis of IC development in regional clusters. The different kinds of networks and different types of knowledge flowing in these networks form the starting point for the analysis. Based on our earlier empirical studies, we state that a regional cluster has three main types of networks: 1) production networks targeted primarily to the implementation of knowledge, 2) development networks targeted primarily to the transfer of existing knowledge, and 3) innovation networks targeted primarily to the creation of new knowledge. Drawing from recent literature, it is argued that KIBS provide the timely information needed in production networks, transfer best practices that support learning in development networks and function as sources of innovation and facilitators of innovation processes in innovation networks.

Keywords: KIBS, Intellectual Capital, networks, knowledge management

Intellectual Capital and National Competitiveness: A Critical Examination. Case Finland

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As the knowledge economy solidifies, it is becoming a widely accepted position that competitive advantage is mainly based on intangible assets and capabilities. In addition to organizations, this also applies to more macro level systems such as networks, regions and nations.

In this paper we examine the national IC of Finland. The aim is to explore the dimensions which are crucial to IC and its development in the national context of Finland, and thereby to map a strategic outline for the future of Finnish IC. The paper is related with a Finnish nation-wide program for assessing and developing the country’s IC.

We look at what has already been done in terms of examining the national IC of Finland by presenting data from recent studies and reports inspecting different aspects of Finnish intellectual capital. Then we map some new directions and suggest a preliminary framework for assessing and developing the Finnish national IC. We argue that especially when IC is examined at the national level, it is necessary to adopt a multi-level perspective, which pays attention not only to the human, structural and relational capital, but also to the social capital and renewal capabilities of the nation.

Keywords: national IC, renewal capability, social capital
IC and KM in a Macroeconomic Perspective: The Portuguese Case

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The aim of this paper will be to apply the concepts of IC and KM to the historic evolution and to the present situation of the Portuguese economy. The conclusion that will be drawn is that Portugal is a case in which IC and KM theories and concepts explain particularly well its history and present situation.

It is well known that Portugal had a “golden age” in the 16th century (1500-1580), following its overseas achievements and its success in trading Indian spices. It is also well known that those achievements were made using important maritime skills and knowledge, which combined with the availability of other physical resources (like wood) produced a living. Unfortunately, in both occasions the affluence was not used to socially develop the country, and the levels of the Portuguese IC were extremely low until 1974, when after a dictatorship of 48 years, democracy was finally installed. Furthermore, and truly, the development of the Portuguese IC was made steady after 1986 when the country entered the EU framework, which favoured immensely the investments in KM and IC. Until then, we almost can talk of Knowledge Mistrust and Mismanagement than of Knowledge Management in Portugal: the dictatorship elite thought that education was dangerous because it inspired rebellion. Crucially, and very interestingly, that massive investment in the immaterial aspects of the Portuguese society, even if made belatedly in world terms, seems already to be showing enormous importance both as a development enhancer, and as a way of coping with the problems posed by the Knowledge Based Economy that will frame the 21st century.

Keywords: Intellectual Capital, Knowledge Management, Portugal. Economic Development.

The possibilities of agent-based modeling in the context of knowledge management

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This paper explores the possibilities of agent-based modelling in the context of knowledge management. Agent-based modelling is an emerging research method that has already been applied in the study of social and economic systems. It is a method that enables the description and analysis of complex systems that constitute of a variety of actors that interact and have an effect on each other.

Nowadays knowledge is created to a growing extent in networks. Complexity science offers a new framework for studying these networks as complex evolving systems, which can be modelled and simulated with agent-based models. The application of complexity thinking to social sciences has received increasing attention during the last decade. Especially agent-based modelling seems to have something to offer to research on the fields of social sciences and business economics.
In the context of knowledge management, agent-based modelling offers the possibility to build explicit models about knowledge creation, knowledge sharing, diffusion and innovation among multiple actors. These actors can be human beings, but also groups of firms and other organisations. Agent-based paradigm may be used also to design DSS and KM software.

Simulating may offer new insights into enabling and inhibiting structures that have an effect on knowledge management processes. Simulation has already been used to give insights into e.g. innovation networks. Those are interesting since the origin of innovations seldom lies in individual organisations, but has moved to networks constituting of them. Although a quantity of research has been conducted, the benefits of agent-based modelling have not been efficiently exploited yet. Thus, research on knowledge management with the assistance of agent-based modelling shall benefit the field greatly, but this requires focused efforts to that direction.

Keywords: Knowledge management, networks, agent-based modelling

Coordination Mechanisms for Knowledge Work: A Case Study

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This paper is based on case study work that examined the work practices of a knowledge-intensive firm: Pi-Corp. This firm provides support for clients' mission critical systems. The work involves finding solutions for complex hardware/software configurations based on generic error codes under severe time pressure. The complexity of the system environment and configurations involved require highly complex technical solutions and may require parts of several previous solutions to be re-used to form a new solution. Re-use of previous solutions is further complicated as new versions of the software are implemented. While work is ostensibly individual complex cases require escalation so that a number of workers become involved in its diagnosis and solution. The case is analyzed using "Coordination Theory" which sees coordination as a process involving the management of dependencies between activities. A number of types of dependencies between tasks and resources are outlined as well as the types of coordination mechanisms available. Organizational structures including the simple structure, bureaucracy and adhocracy, are examined as coordination mechanisms for knowledge work, with elements of all three structures being used in Pi-Corp. The coordination mechanisms examined in the case company involve how tasks are allocated to knowledge workers, how knowledge solutions are documented and reused and finally how complex problems are escalated to other departments.

Keywords: knowledge work, coordination mechanisms, coordination theory, hardware support, knowledge management system.
The Knowledge Management Strategy of Agile Software Development

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Since the late 1990s so-called "agile" methods have become very popular in software development. Many different, concrete agile methods have been suggested, but only very few meaningful, common features of agile software development have been identified. The most popular attempt at this, the "Manifesto for Agile Software Development", is much criticised for its vague style and lack of clarity. As a result, almost any software development method (SDM) can legitimately be declared as "agile" according to the Manifesto. This creates two problems in software engineering. First, the term agile might degenerate into a meaningless marketing term. Second, the arbitrary interpretation of the term "agile" is a major source of confusion in software engineering.

In a recent special issue of IEEE Software on knowledge management (KM) the guest editors note that typical KM activities have always been key practices in software engineering. They point out that many software engineers are not aware of the close link between these key practices and KM and that most current SDMs lack an explicit KM strategy.

This paper is based on our observation that many characteristic practices of agile software development correspond to a KM personalisation strategy. Based on this result we apply the distinction between personalisation strategy and codification strategy elaborated in KM to analyse SDMs. Our KM perspective leads us to the conclusion that agile software development implicitly assumes a personalisation strategy for KM, while other methods implicitly assume a codification strategy. This allows us to present a clear, meaningful characterisation of agile software development based on five key areas of KM. Agile methods focus on these areas, and we show how their approach can be related to established KM concepts. We then use these concepts to derive suggestions for the improvement of the corresponding practices in agile software development.

Keywords: knowledge management strategy, codification strategy, personalisation strategy, agile software development, software development method

Inter-Organisational Collaboration; A Social Network Analysis Approach

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This research-in-progress is concerned with assessing and supporting the role of informal networks within an inter-organisational R&D collaboration. Collaboration between organisations has come into focus in recent years with the recognition that success in a global economy comes from innovation. In tandem with these globalization pressures, over the past two decades, most organisations have
become flatter and more flexible. Management initiatives such as delayering, reengineering and team-based designs have significantly changed the way work gets done. Employees are no longer constrained by the role of formally prescribed relationships in organisations. More work is being done through informal networks and supporting collaboration and work in these informal networks is increasingly important for organisations competing on knowledge and an ability to innovate and adapt. Social network analysis (SNA) is the mapping and measuring of relationships and flows between people, groups, organisations, computers or other information/knowledge processing entities. It provides both a visual and a mathematical analysis of complex human systems. SNA tools have been used to ‘map’ important networks within organisations however, a review of the literature to-date, shows that the applications of these tools to an inter-organisational collaboration context is almost non-existent. In phase 1 of this research, an exploratory study will be undertaken whereby SNA software tools will be used to identify and specify the structural properties of an inter-organisational network. Building upon the data generated in phase 1, the 2nd phase of this study is concerned with developing a framework to promote effective collaboration within an inter-organisational network. This framework will be underpinned by complexity theory concepts. Many authors have called for the application of complexity theories to better understand social networks, yet few authors have systematically applied these concepts.

**Keywords:** Network analysis, collaboration, community of practice, knowledge

**Narratives of Knowledge and Intelligence, Beyond the Tacit and Explicit**

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The fields of knowledge management and intellectual capital have established their basic vocabulary. One of the key distinctions that is used is that of tacit vs. explicit knowledge. We need to move on, beyond the idea that there is a lot of tacit knowledge out there that we just need to make explicit, because this notion encompasses too much, it is too vague, and it doesn’t satisfy the requirement of falsifiability (how can you prove or disprove that tacit knowledge exists, without making it explicit?). There are better ways to describe, analyse and manage intellectual capital, knowledge and innovation, particularly if we employ the notion of narrative.

**Keywords:** objective knowledge, tacit and explicit, narrative, epistemology
A Multidimensional Trust, Self-Efficacy, and Outcome Expectation Model of Knowledge Sharing Behaviour: A Study of Virtual Community of Professional Societies

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Recently, there has been a growing interest in examining the factors that support or constrain one’s knowledge sharing behavior in the virtual communities. However, still very few studies examined it from both the personal and environmental perspectives. In order to explore the issue of knowledge sharing behaviors within virtual community (VC) of professional society, the purpose of this research is to integrate three schools of thoughts, trust, self-efficacy, and outcome expectations, into a theoretical model of knowledge sharing and understand how they eventually influence knowledge sharing behaviors. In addition, in order to integrate the three schools of thoughts, Social Cognitive Theory (SCT) is applied as the theoretical basis for the present study. The proposed research model was then evaluated by structural equation modeling, and confirmatory factor analysis was also applied to test if the empirical data confirmed to the presumed model.

Keywords: Knowledge Sharing, Self-Efficacy, Social Cognitive Theory, Trust, Virtual Community

Knowledge Discovery From Unstructured Data

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Organizations, in the modern hyper-competitive world where performance improvement is an everyday phenomenon, are faced with a twin objective of struggling to keep pace with change and surviving against this change. They are required to compete with local and global players to satisfy the ever-increasing demands of a more knowledgeable customer base. This, in an Indian context, is fuelled by the entry of many multinationals, most of them trendsetters in their respective areas of operations.

They are required to use all the data at their disposal to find faster and better ways of addressing the need of the customer. But, the proliferation of IT across industries and the growth of the Internet have led to organizations battling with inundation of data and information. Organizations, in the past decade were focusing on how to gather data for analysis and decision-making. Now, they are faced with the reality of sifting through enormous data to get meaningful information and knowledge. Organizational data is in both structured and unstructured form. Structured data is one that is organized in databases and data warehouses and organizations use conventional business intelligence tools to gain knowledge. Unstructured data is one that is not in any structured form and the common sources of this type of data are through e-mails, discussions, power point presentations, image files etc. Organizations, to a large extent have been able to derive business intelligence from structured data through various standard business intelligence tools, but the real
challenge faced by them is one of converting unstructured data to structured data that can lend itself to analysis through the application of standard business intelligence tools.

This paper emphasizes the importance of unstructured data and details how organizations can manage & extract business intelligence from unstructured data for gaining competitive advantage, based on case studies from Indian industry practices.

Keywords: Structured data, unstructured data, business intelligence, and knowledge management.

Case Management in Social Service Organizations: A Knowledge Management Approach

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Social welfare sector is facing unprecedented challenges for competitive growth of social problems such as structural unemployment and aging phenomenon. It is essential to make optimal reuse of knowledge of managing social services across various functional units for a social welfare organization. On the other hand, it is also important to ensure that the social workers can access and be trained up with dynamically updated knowledge that meets the changing environment of the society. However, conventional way of case management is inadequate to achieve the multi-perspective for achieving knowledge acquisition, knowledge diffusion, service automation and service performance measurement so as to drive the continuous improvement of the social service quality.

Case management is an approach in social service delivery that receives increasing attention in fields like family, youth, elderly and residential services, etc. Through the collaborative efforts of case managers and related internal and external agencies, complex and multiple needs of clients and their families can be met while risks and loopholes should be minimized. Effectively information and knowledge management is definitely a key to successful and efficient service delivery. It is believed that exploration on how technology advancement may facilitate the processes is not only concern to the field players, but also to the academia with respect to further development of the service approach.

In this paper, a knowledge management approach is proposed for prognostics and diagnostics the problems of the clients so that positive intervention can be taken in advance. Hence, a framework of a knowledge-based case library is proposed which serves the purpose of facilitating the acquisition of tacit and explicit knowledge in managing social services and case management. A prototype case library is being built based on various artificial intelligence technologies. New practices and knowledge can also be derived based on the verified successful and failure cases stored in the knowledge repositories.

Keywords: Case Management, Knowledge Management, Positive intervention, Social Welfare, Business Intelligence