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Preface

These proceedings represent the work of presenters at the 10th European Conference on Knowledge Management (ECKM 2009).

We are delighted to be hosting the 10th annual ECKM at the University of Padua in Vicenza, Italy.

We are pleased to welcome three keynote speakers to the conference. On the first morning we will hear Irma Becerra-Fernandez from Florida International University in the US talking about Knowledge Management and Organisational Learning: Where Technology and Socialisation Meet. On the second morning we welcome Antonio Linari from Semantic Intelligence Division – Expert System S.p.A. who will address the topic Semantics in Action and Frieda Brioschi from Wikimedia Italia will give a presentation on Open Knowledge Management - The Wiki Way. To further enhance the conference experience we have the now well-established ECKM feature of a Knowledge Café led by David Gurteen.

A primary aim of this conference is for academics concerned with current research findings and for those from the wider community involved in Knowledge Management, to present their findings and ideas to peers from Knowledge Management and associated fields. We also hope that the conference provides a platform for practitioners and academics across the field of Knowledge Management to meet those who hold ideas in a face to face interaction, forge long-lasting networks and linkages with colleagues from similar areas of interests. We hope that the conference will help attendees advance in their understanding of how firms and countries generate and exploit knowledge to achieve a competitive advantage, and drive their innovations forward. The range of issues and mix of approaches followed will ensure an interesting two days.

241 initial abstracts were received for this conference. However, the academic rigueur of ECKM meant that, after the double blind, peer review process there are 112 papers published in these Conference Proceedings. These papers reflect the growth in the field of Knowledge Management, and they represent truly global research from some 33 different countries, including Australia, Belgium, Bulgaria, Canada, China, Croatia, Cyprus, Estonia, Finland, France, Germany, Hungary, India, Iran, Ireland, Israel, Italy, Mexico, New Zealand, Norway, Portugal, Romania, Saudi Arabia, South Africa, Spain, Sweden, Switzerland, Taiwan, Thailand, The Netherlands, Turkey, United Kingdom, USA.

We hope that you have an enjoyable conference.

Ettore Bolisani, Conference Chair
Enrico Scarso, Programme Chair
September 2009
Biographies of Conference Chairs, Programme Chair and Keynote Speaker

Conference Chair

Dr Ettore Bolisani obtained a degree in Electronic Engineering ("Laurea") and a Ph.D. in Innovation Studies at the University of Padua (Italy). He is Associate Professor at the Faculty of Engineering of the University of Padua. Prior to this position, he was Assistant Professor at the University of Trieste (Italy) and, in 1997, research fellow at PREST (University of Manchester - UK). His research centres on technology assessment and technology management, with an emphasis on Information and Communication Technologies and knowledge management. He has worked in several research projects funded by the European Union, by Italian public institutions, and private organisations as well. Ettore is Editor of “Building the Knowledge Society on the Internet: Sharing and Exchanging Knowledge in Networked Environment” (2008), published by IGI Global.

Programme Chair

Dr Enrico Scarso holds a degree in Electronic Engineering and a Ph.D. degree in Industrial Innovation at the University of Padua. He is currently Associate Professor of Engineering Management at the Faculty of Engineering of the University of Padua. His research interests are in the area of economics and management of new technologies, and knowledge management. He has published in several journals and has presented various papers at international conferences. He has actively participated in important public (national and international) and private research projects. Enrico is member of IAMOT (International Association for Management of Technology) and IEEE (Institute of Electrical and Electronics Engineers - Engineering Management Society).

Keynote Speakers

Antonio Linari attended the Naval Academy in Livorno (Italy). He holds a degree in Telecommunication Engineering from Pisa University and a MSc in Electronics applied to Telecommunications from Roma University. He has held the position of was Chief Officer of the division “Systems and Communications “ at MOD (Ministry of Defence - Italy). Currently he is CTO for Semantic Intelligence Division at Expert Systems, and Product Manager for the new COGITO® Focus platform.

Dr. Irma Becerra-Fernandez is the Knight Ridder Research Professor of Management Information Systems at Florida International University (FIU) College of Business Administration. She’s currently a MIT Sloan Visiting Scholar with the Center for Information Systems Research and she is the 2007 Kauffman Entrepreneurship Professor. Her research focuses on knowledge management (KM), KM systems, enterprise systems, disaster management, and IT entrepreneurship. She has studied and
advised organizations, in particular NASA, about KM practices. She founded the FIU Knowledge Management Lab ten years ago, and has obtained funding as principal investigator for over $1.8 M from the National Science Foundation, NASA (Kennedy, Ames, and Goddard Space Flight Center), and the Air Force Research Lab to develop innovative KM systems. She has published extensively in leading journals. Dr. Becerra-Fernandez was the recipient of the 2004 Outstanding Faculty Torch Award, presented by the FIU Alumni Association, the 2006 FIU Faculty Teaching Award and the 2001 FIU Faculty Research Award. She is also the faculty director for the Masters in MIS, the director of the MIS Ph.D. Program.

Biographies of contributing authors (in alphabetical order)

Jennifer Adelstein is a senior lecturer in business at the International College of Management Sydney. She has a BA (Hons. 1st) from University of New South Wales in history and sociology and a PhD in management and organization studies from the University of Technology, Sydney. Her research interests include: discourse analysis; organisational power relations; knowledge work.

Tatiana Andreeva, Ph.D., is an assistant professor at the Organizational Behavior and Human Resource Management department of the Graduate School of Management of St.Petersburg State University. She is currently involved in teaching, research and management consulting. Her key research interests –knowledge management, change management, and cross-cultural issues in organizational behavior.

Eve Adjadji Current occupation: Technical Coordinator Centre of Excellence . Company: iicorr. For the past ten years I have worked for the following sectors building corporate intranets extranets and online businesses. IT: - Compaq, Corasworks. Oil and Gas: –Amec. iicorr. Financial: - INVESCO. Architecture: – PH media

Tatiana Andreeva, Ph.D., is an assistant professor at the Organizational Behavior and Human Resource Management department of the Graduate School of Management of St.Petersburg State University. She is currently involved in teaching, research and management consulting. Her key research interests –knowledge management, change management, and cross-cultural issues in organizational behavior.

Aurilla Aurélie Bechina Arntzen is a Professor at the College University of Buskerud, Norway since January 2008. She is adjunct Professor at the College University of Hedmark in Norway and visiting Professor at Bangkok University in Thailand. She received her PhD in Automation, from the Institute National des Sciences Appliquées (INSA) of Strasbourg, France. She has several years combined teaching and research IT experience from several well-known international institutions in Australia, Thailand, Sweden, Germany, Norway and France. Her academic interests are broad ranging from real-time systems development to the conception of knowledge systems.
Robert Ayres is a lecturer in the Department of Informatics and Sensors at Cranfield University. His teaching and research focus on knowledge management and information management. He is currently involved in developing information management guidelines for senior managers in the UK’s Ministry of Defence. Before entering academia he worked in the software services industry.

Mehdi Bagherzadeh Niri graduated from B.Sc. in industrial engineering at Malek-Ashtar University of Technology (MUT) in 2007. Being the top student in the B.Sc. he was admitted directly for doing his mater of Business Administration (MBA) at that university. His research interests are in the field of knowledge management and strategy. More specifically, he is interested in various research topics related to Personal Knowledge Management, and knowledge active forgetting at individual and organizational level.

Elena Bouleanu Clinical Psychologist and Professor Assistant at the “Lucian Blaga” University, Department of Psychology, waiting for PhD this year. My role in the project mentioned in the acknowledgement is to identify psychological indicators for an optimal utilization of the resources, using relevant information and competent human resources. Also interested in research of stress and emotions.

Dimitris Bibikas is a Research Associate and PhD Candidate at SEERC (South East European Research Centre), a Research Centre of The University of Sheffield and CITY College. He holds a BSc in Mathematics of Aristotle University of Thessaloniki, a Masters in Information Systems and a Masters in Business Administration, both from the University of Macedonia, Greece. His research interests include the impact of Information and Communication Technologies on knowledge and innovation management, social networks and organisational adaptive strategies. He has extensive experience in coordinating R&D projects awarded by the European Commission, the Greek General Secretariat for Research and Technology, and the Greek Information Society Programme.

Kirsimarja Blomqvist, Professor for knowledge management. Kirsimarja is a professor for knowledge management and a vice-director for Technology Business Research Center at Lappeenranta University of Technology. Her research interests include the emerging theory of trust and its applications, knowledge management, R&D and innovation management, strategic alliances as well as inter- and intra- organizational collaboration. Her research has been published e.g. journals such as Research Policy, R&D Management, Technovation, European Journal of Innovation Management, California Management Review, Journal of Engineering and Technology Management, Creativity and Innovation Management, Industrial Marketing Management, Scandinavian Journal of Management, Journal of Strategic Change as well as book chapters in several international and Finnish books.

Ettore Bolisani obtained a degree in Electronic Engineering ("Laurea") and a Ph.D. in Innovation Studies at the University of Padua (Italy). He is Associate Professor at the Faculty of Engineering of the University of Padua. Prior to this position, he was Assistant Professor at the University of Trieste (Italy) and, in 1997, research fellow at PREST (University of Manchester - UK). His research centres on technology assessment and technology management, with an emphasis on Information and Communication Technologies and knowledge management.
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Stefano Borgo is a researcher at the Institute of Cognitive Sciences and Technologies, part of the National Research Council (CNR) in Trento, Italy. Trained in mathematics and computer science, he now works in the areas of knowledge representation, logic and artificial intelligence with special interests in multi-agent systems, engineering design, product and process modelling.

Sheryl Buckley is Deputy Head of Department in the Department of Business IT, at the University of Johannesburg, specializing in Information and Knowledge Management, Management Information Systems and Business Fundamentals. Sheryl previously taught at a High School for 10 years and at a Technical College for 10 years before joining the University in 2000. Sheryl is a member of the Computer Society of South Africa, the South African Institute for Management Sciences and the Knowledge Management Practitioners Group. Currently working towards her PhD in Knowledge sharing in communities of practice in HE institutions.

Vasile Carutasu graduated from the Faculty of Mathematics, Bucharest University in 1992 and obtained his PhD degree in Mathematics in 2003, from Babes-Bolyai University, Cluj-Napoca. Since 1992 he has been involved in educational and research activities, at present being the Head of the Research Department from “Nicolae Bălcescu” Land Forces Academy. His fields of interest are Operational Research, Applied Mathematics, and Army Knowledge Management.

Juan Cegarra-Navarro is a Doctor in Business Administration, and Master in marketing and communications. Currently, he is an associate professor of the Facultad de Ciencias de la Empresa, Universidad Politécnica de Cartagena, Paseo Alfonso XIII, 50, 30203 Cartagena (Spain). His research is focused in Knowledge Management.

Daniela Cosma. Is an Assistant Professor, PhD candidate, Bachelor in Mathematics. Specialist in Applied Mathematics and IT. An overall experience of more than 17 years in the field of higher education. Published many books, handbooks, and articles in fields such as: modeling, probabilities and statistics, decision theory, quality management in higher education, Knowledge Management. Gave many presentations in national and international conferences, workshops, and round tables. (Participated in the QFD Kasel Seminar held in Germany in 2007, being awarded the QFD Green Belt title.

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Her main fields of interest include knowledge management and knowledge sharing. She has published numerous articles and presented her work at national and international conferences.

**Jorgen Dalen** is a Norwegian information architect, currently working for the consultancy firm Halogen. He has specialized in search and findability, mostly within Intranets and knowledge management applications. He has a background from cognitive psychology and industrial design. Jorgen is a frequent speaker at various conferences on information architecture and user experience.

**Ray Dawson** is Professor of Knowledge Management at Loughborough University, UK. He obtained a bachelor's and a masters degree from Nottingham University before entering industry with Plessey Telecommunications in 1977. At the company he developed an interest in the working methods for information systems development as practiced in industry. Since 1987 he has continued this interest in industrial working methods at Loughborough University, working with companies to improve their information and knowledge management systems.

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Amy Hsiao is an associate professor in the Faculty of Engineering and Applied Science at Memorial University of Newfoundland. She heads the Masters in Engineering Management Program and is cross-appointed with the Faculty of Business Administration. Her research focus is in the area of strategic management, technology entrepreneurship, organizational behavior of tech-based ventures, and materials science and engineering.

Eli Hustad is an Associate Professor of Information Systems (IS) at the University of Agder, Norway. She holds a Ph.D. from the University of Oslo, Department of Informatics. Her research interests and teaching focus on enterprise systems, knowledge networking and boundary-spanning issues, knowledge management systems, social networking media and enterprise 2.0, and qualitative research methods in IS.

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Trust me; it’s for Your own Good! The Problem of Systematizing Personal Relationships

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Abstract: The paper examines trust as management ontology for organization praxis. Although it is not specifically stated in much of the management and organizational literature, the necessity for trust among individuals, who may have to work together but who may not trust each other or management, may inhibit knowledge transfer and knowledge sharing and negatively impact on what is known as organizational knowledge. Modes of building trust relationships through individual interactions are being reconstituted as objects of management discourse aligned to discourses of knowledge management and systematized as arm’s length organizational processes that deny the interactivity between and among individuals. Following on from this, if an intangible such as knowledge can be systematized as knowledge management, then it may be possible to systematize other intangible activities also. The benefit and the beauty of such systems is they can be imposed by management as part of corporate culture and are seen as being able to overcome the trickiness and the time-consuming activities associated with developing personal relationships between and among people that support knowledge-sharing activities. Moreover, the rationale is that relationships built on well-defined systems of trust can be standardized, benchmarked, measured and managed in terms of productivity to benefit an organization. To be able to manage trust is to create a means of predicting risk and blame based on adherence or otherwise to such systems. If, as is argued here, management aims to make the process of building trust visible by systemizing it within organizational contexts, what is the likely success of acceptance by organizational members of management’s bait and switch from building personal trust as one conversation at a time to legitimizing organizational trust as a systematizing framework? This question is central to the paper in exploring the key concern of how organizational members respond to management’s strategy to prescribe a framework for creating trust within an organizational context. While organization members may use the language of management in describing their experiences of trust and distrust in organizations, their views express conflict and mistrust. The paper researches the question as a discourse analysis of a community of knowledge practitioners who discuss trust and knowledge management in their own terms through their praxis. The implications for management may require a rethink of current strategies of systematizing trust in organizations.

Keywords: Organization trust; discourse analysis; communities of practice (CoP); knowledge management; knowledge practice

Investigating Concepts for an Interconnected Socio/Technical KM Planning Approach

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Abstract: Socio-technical theory and methods have been around for a long time, but the practical effect on practical IS planning seems limited, including the planning of knowledge management systems. Given the complex nature of knowledge, here is a clear need of understanding KM systems using both a technical and a social perspective. This research focuses on how concepts and ideas from the socio-technical field can be used in practical knowledge management systems planning. As an outcome we present a set of dimensions to be used for a knowledge management planning framework.

Keywords: Strategic knowledge management, planning models, socio-technical theory
Impact of Knowledge Management on Credit Risk Management in Jordanian Banks

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Abstract: Knowledge Management (KM) is becoming an increasingly important essence of business operations. Competition is growing fiercer as many banks continue to offer multiple products of choice to customers, so as to target their different personal tastes. Currently credit risk management departments in Jordanian banks face difficulties in gaining competitive opportunities from the use of the vast information and knowledge resources they hold. One of the big challenges they face is credit risk evaluation. Historical customer data from Jordanian Banks will be used to design a Credit Risk Management System. The aim is to illustrate how Jordanian banks can use historical data of customers stored in data warehouses to build a credit risk model to differentiate between the profiles of customers that the banks might consider as high or low risks. This will be done through Analysis of the credit default dataset, form Jordanian banks, and Deployment of the risk model into an operational risk management scheme. Besides, this paper examines the variables that influence the risk of default in Jordanian banks. By using the knowledge gained from the model, the banks will be able to make better decisions when new customers apply to them for a loan. Banks will try to limit customers falling into high risk customer profiles, and will direct its marketing schemes to attract people with low risk profiles. Keywords: Knowledge Management (KM), credit risk management, Jordanian Banks, and logistic regression analysis

What Motivates Knowledge Workers Most? Some Empirical Evidence From Russia

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Abstract: With knowledge being considered as a key source of competitive advantages in the modern economy (e.g., Nonaka, 1991), the issues of managing knowledge workers draw particular interest of managers and academics alike. Due to the specifics of knowledge work nature, control and measurement of knowledge workers’ productivity is a difficult task (Drucker, 1999; Thomas, Baron, 1994; Mollenhoff, 1977). So in many cases managers have to rely mainly on good-will and intrinsic motivation of a knowledge worker to implement given task with maximum quality and minimum costs, to share his/her knowledge with others, etc. This brings to the forefront the issue of knowledge worker motivation (Tampoe, 1993). Writings on knowledge workers are predominantly based on the idea that they represent a very special category of employees that differs significantly from “traditional” workforce (Wuthnow, Shrum, 1983; Drucker, 1999; Scarbrough, 1999). Extended to question on motivation, this assumption posits that knowledge workers differ from others by their structure of intrinsic motives where self-actualization and self-expression bear very high value (Brenner, 1999; Dunkin, 2003). However, our literature review revealed that despite this idea is often taken as an axiom, there are too few empirical studies to support it. Our paper is aimed to shed more light on this problem by examining empirical data from 216 employees. Comparative data analysis revealed statistically significant differences between knowledge workers’ and manual workers’ structures of motives, both in the hierarchy of motives, and in the dispersion of the significance between different motives. However, contrary to some ideas in the literature, we found the motive of financial well-being to be quite important for knowledge workers. Keywords: Knowledge worker, motivation, Russia
Extended Architecture of Knowledge Management System With Web 2.0 Technologies

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Abstract: Knowledge management systems (KMS) become increasingly important in periods of crises and economic slowdown, as many organizations are forced to lay off people, to reduce research and ICT budgets, to restructure departments and to optimize their costs. Subsequently, organizational knowledge assets, and mainly the existing tacit knowledge are threatened. This raises the importance of technologies that could assist organizational efforts to capture the existing knowledge and to mobilize it in order to overcome the crisis. Knowledge management systems should respond to these expectations and enable organizations dynamically to acquire and profit from all sources of knowledge. The present paper discusses the opportunities provided by extended KMS architecture combining elements of Web 2.0 technologies. It considers how Web 2.0 technologies can increase organizational effectiveness, efficiency and usability for company KM. The main services provided by KMS are identified and ranked. Finally, the paper makes an overview of the issue how KMS can enable companies to transform risks of the crises to new opportunities for further development.

Keywords: Knowledge management system, KMS architecture, Web 2.0, Cloud computing

Is the Emergence of Social Software Source of Knowledge Management Revival?

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Abstract: Lately, a debate regarding Knowledge Management decline has risen. Even though most of top executives recognize that knowledge is a strategic asset that leads to increase business performance, KM implementation remains problematic. The main barriers remain in its adoption by all types of users and contributors. Many companies reported examples of Knowledge Management initiatives that were not as successful as expected. Failures are often due to lack of employee’s enthusiasm to participate actively in the Knowledge sharing processes or to the opacity of social relationships linking people across the organizations. The persistent quest to achieve KM objectives and to foster collaboration has led strategists to consider emerging technologies, such as social software, to support new networked and informal business structures. This paper discusses the role of social software in the knowledge management renaissance.

Keywords: Social software, Knowledge Management, knowledge sharing, Web2.0, technologies, organizational culture

Using a Four Layer Framework to Expose the Tacit Assumptions Behind Business Processes

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Abstract: The design and implementation of effective operational processes is key to business efficiency. Few processes can be completely automated and many will require staff to make decisions or exercise judgement at particular points. This can lead to difficulties if staff do not share a common set of assumptions about the purpose or significance of the process. When this is the case there is the danger of confusion and
inconsistent decisions. In this paper a Four Layer Framework is presented which
distinguishes the basic assumptions underpinning a process, the rules which it should
implement, the process itself, and the supporting technology or work procedures needed
to implement it. For example a university admissions process may be underpinned by the
assumption that only students who are able to cope with a course should be accepted onto
it, this may be reflected in rules for assessing candidates’ qualifications and a process for
dealing with applications. This process will in turn be underpinned by technology, such as
computer systems or work procedures. Two main problems may arise. Firstly basic
assumptions underpinning a process may not have been articulated and so remain tacit.
For example, the need for speedy processing of applications may be assumed by those
overseeing the admissions process but course leaders may not be aware that this is a
concern. Secondly, there may be inadequate linkages between the layers. For instance
the assumption that only students who can cope with a course should be accepted may
not have been translated into explicit rules to be applied when assessing applications.
These problems are essentially ones of knowledge sharing. Resolving them involves
exposing tacit assumptions which underpin processes, ensuring that they are understood
by all those involved, and ensuring that there are clear linkages from assumptions and
objectives in the top layer, through to rules and procedures at the lower layers. Besides
introducing the Four Layer Framework, this paper also presents a case study where the
Framework was used to support the analysis of a university admissions process. Using the
Framework helped to focus attention on the root causes of inefficiencies in the process. It
also clarified the need for simple knowledge sharing between different staff involved with
the process. The authors believe that the Framework presented in this paper is a useful
tool for helping to focus attention on aspects of business processes which are often
overlooked. In particular on the tacit assumptions which may have been made, yet not fully
articulated, about objectives and ways of working. Bringing these into the open is an
important step in understanding business processes and in improving their effectiveness.
The Framework has the advantage of being simple and so can be used in any situation
where there is a need to clarify assumptions and modes of reasoning which underpin
behaviour.

Keywords: Knowledge management; knowledge sharing; tacit assumptions; knowledge
framework.

Effects-Based Knowledge Management in Changing Environments Meant to Improve the Information Domain of
Communicating Agents

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Abstract: The diversification of action perspectives comes as a response to the changing
environments and entails continuously combining the available information in new ways
and efficiently using the resources by valorising the relevant information. Applying the
concepts of EBO (Effects-Based Operations) and KM (Knowledge Management) to such
environments implies a detailed analysis of the interaction between systems, between the
nodes of a system as well as between the communicating agents within a node. A
collection of data is not information; a collection of information is not knowledge. The fuel
that powers the EBO concept and its associated planning cycle is knowledge. Applying
EBO from the KM perspective means accomplishing and reinforcing the cycle – observe-
acquire-decide-act – by activating the agents from the three domains: physical, information
and cognitive. From the KM perspective, the physical domain is characterized by
technology’s high capacity to observe and analyze the environment, the information domain by the capacity to process information, the cognitive domain by agents’ capability to extract the relevant information from the processed data and to make the optimal decision. The paper advances a model of analysis and organizational design from the perspective of applying the concepts of EBO and KM. The key element is interaction which at node level means acquiring, disseminating, using, accessing and sharing data among communicating agents, at system level, connecting the system nodes, i.e. achieving the information cycle, whereas at system of systems level, providing cohesion, i.e. generating knowledge. Interaction is related mainly to the information domain. All gain in knowledge depends upon communicating agents’ capacity to understand and process information. Precision and information processing speed are given by the expertise of communicating agents (Levchuk 2001). From this point of view, harmonizing the agent with high generalization capabilities with those with high specialization capabilities leads to maximum effects in complex and diverse situations. Information relevance in the decision-making process should be considered not only in terms of information quality (absolute value) but also in terms of agents’ processing capability. Information processing by agents implies a correspondence between the information format and agents’ expertise and level of understanding. In this respect, agents’ processing capability influences how the information available in a node is turned into relevant information for the decision making process. Knowledge means extracting the right and relevant information from a wide variety of information, sending it to the right person capable of making the decision, at the right time and without distortions. Therefore, interaction in the information domain represents the link between those who observe and collect the environmental changes, i.e. those who know and those who need these data, i.e. those who need to know, in order to generate situational awareness. To conclude, the paper will offer an instrument for the assessment, evaluation and adaptation of tasks in the information domain between knowledge-in-depth agents and knowledge-in-width agents in order to optimize the information flow between cognitive and physical domains. This approach gives sense to information processing by extracting the relevant information from the environment for optimal decision.

Keywords: Effects-based operations, knowledge management, information domain, communicating agents

Integrating Knowledge and Innovation Through Practice-Based Thinking: Early Findings From an SME Case Study

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Abstract: Under the light of the numerous cross-references on the role of knowledge and innovation in their respective definitions, one might expect that these research strands would be explored almost in parallel. Yet, the synchronous investigation of knowledge and innovation in management studies constitutes the exception rather than the rule. The purpose of this paper is to discuss the relationship of knowledge and innovation, following a practice-based perspective and shifting the focus to a mediating role of practice, while distanciating ourselves from agent or structure dichotomies. We explore tensions between
knowledge and innovation through the life cycle of a small company’s business model development.

**Keywords:** Knowledge, innovation, structure, agent, lifecycle

## Trust In Organizational Knowledge Processes

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**Abstract:** Knowledge-based organizations base their competitiveness on efficient and effective knowledge processes. In this paper it is proposed that different types of knowledge processes require different type of trust and related trust processes. Trust is seen as a multi-dimensional construct, and various trust processes are identified based on literature. Competence trust is fundamental for knowledge interaction and related processes. Cognition-based capability, predictability and even calculative trust processes build competence trust supporting extrinsic motivation and coordination required for knowledge transfer. However, co-creation of tacit knowledge requires strong trust based on all dimensions of trust, i.e. competence, identity and goodwill. Affect-based identification, intentionality and affect-based trust processes are required to support sufficiently the intrinsic motivation and collaboration needed for tacit knowledge co-creation. In addition to internal fit contingencies between trust processes and external factors such as environmental uncertainty and dynamics may impact knowledge process effectiveness. It therefore is argued that understanding the fit between trust and organizational knowledge processes is vital for efficient and effective knowledge processes and organizational knowledge management practices. Paper’s theoretical contribution lies in providing a contingency model on the trust processes and knowledge processes. Paper concludes with research and practical implications.

**Keywords:** Cognitive trust, affect-based trust, organization, knowledge processes, contingency model

## How Can We Increase the Efficiency of Knowledge Capital by Differentiating between Repetitive and Innovative Work and Their Management?

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**Abstract:** Most companies in Eastern-Europe are still managing their workforce as a mass and are concentrating only on the overall employee headcount. In contrast, progressive knowledge companies manage their employees in a pyramid system. At the top of this pyramid there are the innovative and collaborative workers, while at the bottom there are the workers performing repetitive tasks. As a result, employees are divided into groups and managed in different ways as a function of knowledge, the most important production factor. In this sense companies get beyond handling employees as an aggregate and are able to manage individual employee profit centres. In this study, the authors examine how this new management practice can be established in Hungary and Eastern-Europe. Firstly, they take into consideration the distinguishing features of the two basic archetypes of employment known as repetitive work and innovative work in their approach. Secondly, they describe the different management practices for these archetypes paying special attention to the analysis of common Eastern-European mistakes. Finally they illustrate the related employment problems in a knowledge capital model. They also analyse how old
fashioned human resource management either reduces the efficiency of corporate knowledge assets or destroys the value of corporate knowledge capital. The emerging crisis – which often demands the reduction of human resource costs – gives special actuality to this topic. Those companies who do not implement such structured employment models risk a significant loss of knowledge capital as they attempt to reduce the cost of human resources. True company renewal, however, is possible only through providing appropriate support for innovative work. Otherwise competitive advantage is lost. Repetitive work alone does not produce competitive advantage; it can be copied or done better with time. Success results only from a structured human resource management practice which develops both types of work in harmony while using different management tools.

Keywords: Repetitive work; innovative work; employment pyramid; time report; HR controlling model; HR value chain

Formalising Knowledge as a Measurable Economic Asset: an Interdisciplinary Approach

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Abstract: This paper proposes an interdisciplinary study of the problem of measuring knowledge as an economic asset, with the purpose to discuss the possible foundational elements that can lead to a more rigorous and formal approach. In particular, our investigation concerns: 1) the meaning of measurement when applied to knowledge: 2) the nature of accounting applied to knowledge; 3) the role played by cognitive science in identifying the different dimensions of knowledge.

Keywords: Knowledge measurement, accounting, cognitive science, theoretical foundations, ontology

Creating an Environment to Promote Knowledge Transfer From Universities

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Abstract: There are increasing drivers for academics to transfer knowledge to industry, to both improve industrial competitiveness and to increase institutional income. Key to success is an understanding of the motivation and expectations of the academic supplier and industry buyer of knowledge. A survey was conducted among academics, industry and intermediaries (business development managers, technology transfer officers) to determine factors promoting or inhibiting collaborative research. Whilst the perceptions of intermediaries and industry were broadly similar, those of academics differed. In particular, factors motivating academics to engage with industry are poorly appreciated by intermediaries and industry. Academics are primarily motivated by the desire to transfer knowledge, rather than generating income. One area of dissatisfaction for industry is poor timeliness of delivery of project outputs; this can have a detrimental impact further down the product development value chain. Academics should be made more aware of the needs of industry, including timely delivery, and should be given more support (through training and project management capabilities) to deliver the specified outputs on time. Whilst the cost of conducting research in universities has increased, in recent years, industry still seems to regard it as offering good value for money. Further price rises can only be justified by increased, customer-focussed, professionalism within the academic
community. A major difficulty in initiating collaborative research is in identifying partners. The large UK knowledge base, within universities, makes it difficult for industry to access the expertise they need. For academics, it is often identifying the right individual within a firm that presents a great difficulty. Due to the low levels of resourcing for intermediaries within universities, it seems their role is somewhat hampered in identifying potential synergies between academics and industrialists. This research has identified differences in perceptions of collaborative projects between stakeholders, however, further work needs to be done to understand the factors that inhibit industry-academic interactions.

**Keywords:** Knowledge transfer, motivation, expectations, delivery, academia, industry

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**Decision Mechanisms in Situations of Stress Risk Versus Situations of Positive Emotions**

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**Abstract:** Decisions are the foundation of our teleological behavior, expressing the intentions of human beings. Making a decision consists of a series of cognitive processing acts leading to choosing one alternative among a multitude of available options. The affective style combined with the cognitive style determines a specific individual behavior, including the decision making process. The paper contains an in progress research regarding the process of decision making in subjects exposed to different situations of stress risk and positive emotions. We considered the five decision styles model described by Scott and Bruce and the “broaden-and-build” model of positive emotions described by Fredrickson. The purpose is to find out if the process of decision making is influenced by cognitive factors rather than affective factors and how. We hypothesized that situations of stress risk and positive emotions temporarily change the decision style of a subject. We also hypothesized that situations of stress risk are more susceptible to determine rational decisions whereas positive emotions determine intuitive and spontaneous decisions. Participants are undergraduate students from the Psychology Department and the Army Academy. First we evaluated the decision capacity and decisional style for 78 subjects using the Decision Capacity Test (DCT) and General Decision-Making Styles Inventory (GDMS). In the second phase we selected 23 participants for a quasi-experimental pretest-posttest design. Each subject was exposed to a stress risk situation and positive emotions. After each situation we reevaluated them with the GDMS. We found no significant correlation between the Decision Capacity Level (DCL) and the Decision Style (DS). Perceptions of both a stress risk situation and a positive emotions situation cause a change of the decisional style of the studied participants. The significant negative covariance between rationale style and spontaneous style verifies the theory which places these two styles at diametrically opposed ends. The significant positive covariance between intuitive style and spontaneous style is a logical consequence of the former conclusion. The positive covariance between avoidant style and dependent style was expected because these two styles reflect similar personality traits, an aspect which could be studied in future.

**Keywords:** Decision making, decision style, cognitive style, stress risk, positive emotions
Challenges in Knowledge Sharing in Higher Education

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Abstract: In a knowledge economy, knowledge, the way it is shared and created and the way these actions are managed could lead to either a competitive advantage and the organisation can flourish or be the demise of the organisation irrespective whether it is predominantly knowledge driven or manufacturing driven (Baumard, 1999; Malone, 2003; Nonaka, 1994). Since knowledge (tacit and explicit) resides in the minds of the people and some of it can be subsequently codified and become ‘common to all knowledge’, then managing people’s knowledge becomes a challenge to the organisation (Geisler, 2008; Roberts, 1998; Walczak, 2005). The situation at a University is not very much different but creation of new knowledge is not a voluntary act, nor is transferring of knowledge which is one of its main tasks. However, when it comes to sharing of knowledge among the academics the degree of sharing may vary and it can be voluntary or imposed on if necessary; for example when a group of academics collaborate on a task. If it is true that voluntary sharing of knowledge (mostly tacit) can lead to a competitive advantage, here being the creation of a world class University then an investigation into the knowledge sharing is imperative. This study is an attempt to determine the degree of knowledge sharing in a formal (or informal) Community of Practice (CoP) at a university as well as identification of factors that promote or impede knowledge sharing among the academics.

Keywords: Knowledge sharing, higher education, communities of practice, tacit knowledge, explicit knowledge

Knowledge Leaders: Key players in the Knowledge Creating Organization

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Abstract: Traditional organizations’ lack of Knowledge Leadership has become a major issue. Our proposal is a new type of team manager: the Knowledge Leader, who performs several functions of the Knowledge Champions and extends the notion of CKO into the teamwork context. This paper intends to clarify the relevance and necessity of a Knowledge Leader in every workgroup in organizations. Knowledge Leaders keep Knowledge Management efforts aligned to business strategies, making organizations competent. Without its leaders, a company will turn into a hollow shell.

Keywords: Knowledge leaders, knowledge management, chief knowledge officer, knowledge creating organization, business strategy, knowledge managers

Knowledge Management vs. IT: What is the Only Sustainable Source of Competitive Advantage Nowadays?

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Abstract: Few years ago, so many companies were convinced that they could reach positions of competitive advantage through investments in information technologies (IT’s). This was certainly true for a while; however, IT’s by themselves are not able to provide organizations with such a position anymore. One of the reasons for that is the tendency for the information technologies to become commodities; hence any competitor who has the enough acquisitive power could replicate the technological deployment of the leader,
destroying this way the position of advantage. This work wants to explore a new source of competitive advantage called knowledge management, and its relationship with IT’s. This paper also shows that companies should not regard IT’s and KM as competitors but as coordinated efforts when trying to reach a position of competitive advantage.

**Keywords:** Knowledge, information, knowledge management (KM), commodity, investment, information technologies (IT’s), strategic resource

### Monterrey: International Knowledge City?

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**Abstract:** The overwhelming world situation has profoundly disturbed researchers, scientists and citizens, making them wonder about the vital element that guarantees life quality. While authorities and politicians struggle to provide for their citizens, idealists dream about the idea, as cliché as it must be, of a more prosperous world for everyone. Information technology and development alone have proved to be necessary, but indeed have been insufficient. Quite surprisingly, it’s been transpired that knowledge is the most precious asset every entity has. The importance of knowledge has been confirmed given that it is actually capable of providing an enduring solution to cities’ main problems. Following this trend in the 90’s, the link between knowledge and cities was born along with the concept Knowledge City (KC). Around this idea, since 2004, Monterrey’s government implemented the program *International Knowledge City*, a project based upon actions specifically designed to increase value to the city through knowledge creation and innovation. Its objective was and still is, to introduce Monterrey into the age of knowledge whilst transforming its landscapes and people. Hereafter, the objective of this paper was established: to determine whether or not Monterrey is becoming a KC. As such, this paper follows Ergazaki’s methodology explained in *A unified methodological approach for the development of knowledge cities* which is applied to Monterrey’s knowledge infrastructure and also incorporates functional concepts derived from Knowledge Management. Furthermore, to complete the analysis, a comparison with the international admired KC of Singapore is included. The results indicate that Monterrey is a developing KC, improving by the minute. Modern infrastructure is being built all over the region, investment in education and investigation has reached its highest level and a cultural positive change is being spread across the population. Moreover, the paper’s very nature and subject uniqueness is not only evident, but breathtaking; Monterrey may be the only Latin American developing KC and thus will undoubtedly become a useful guide to sister cities in the implementation of similar projects, resulting in a transmittable improvement for every country it reaches.

**Keywords:** Knowledge city, knowledge based economy, knowledge channels, knowledge based development, stakeholder, value creation

### The Design and Implementation of a KM System Meant to Optimise the Selection of Human Resources Able to Operate in the Modern Battlefield

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**Abstract:** The application of KM principles and techniques in the military context could influence both how new military technologies are implemented and how the military
personnel use them. One of the most important directions in the Romanian Army is to connect those who know with those who need to know by leveraging tacit and explicit knowledge transfers across the military academies, training centres, operational units, so that the military engaged in international missions abroad should meet the objectives and be able to properly use knowledge, taking into account the risks that are expected in different theatres of operations. Even if in multinational operations there is a natural tension because each military organization brings its own policies, procedures and technology, to cooperate they have to share their intellectual capital across their units and create a common KM system reflected in standards accepted by everyone. This principle will create a culture of cooperation and knowledge sharing in each modern Army, which is the key correlation between military’s psycho-individual characteristics and mission objectives. It is common knowledge that the human resource is the most important resource of all organizations in general, and of the military organization in particular, since the latter participates in military operations where human lives can be lost. The main objective of this paper is to provide a tool for the optimal selection of human resource participating in missions specific to the Land Forces. It aims at improving the selection process by offering a scientific tool, the decision process could be based on. The first step in this respect is to identify the new mission types and risk factors which can influence the mission (different conditions in theatres of operations) with the possibility to estimate the probability of occurrence, build up new models and typologies for missions, create a data base, establishing the similitude, establishing a set of criteria and analysing hypotheses regarding the evolution law. The second step is to analyse combatants’ features and draw up the individual and psychological features of the military (fitness, fundamental knowledge, language knowledge, skills). To accomplish this objective the authors have created a data base characterizing the combatant model able to successfully act in the modern battlefield, taking into account the weights of risk factors. The next step is to identify the multidimensional correlations between the characteristics of the mission and the psychological features of the personnel. The last step is to build up a KM system for the task forces participating in combined joint operations. Our KM system can be a useful tool in training the personnel in real modern battlefield conditions and in assessing the increasing efficiency of personnel selection depending on the type of mission. The military, like their corporate counterparts, recognize the important role of intellectual capital in the modern military organization, especially in the field of human resource management. The KM system requires personnel to take more responsibility for decision-making and should improve the effectiveness and timeliness of training in complex situations.

**Keywords:** Knowledge Management, mission types, human resource selection, mathematical model, optimization

**Linking Unlearning with Innovation through Organizational Memory and Technology**

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**Abstract:** While the information technologies provide organizational members with explicit concepts, such as writing instruction manuals, the ‘organizational memory’ provides individuals with tacit knowledge, such as systematic sets, routines and shared visions. This means that individuals within an organization learn by using both the organizational memory and the information technologies. They interact to reduce organizational information needs contributing to improve organizational innovativeness. However, the
utilization of the organization memory or the technology infrastructure does not guarantee that appropriate information is used in appropriate circumstances or that information is appropriately updated. In other words, previous memories reflect a world that is only partially understood and assimilated, which might lead individuals to doing the wrong things right or the right things wrong. This paper examines the relative importance and significance of the existence of unlearning to the presence and nature of ‘organizational memory and technology’. We further examine the effect of the existence of organizational memory and information technology on conditions that promote organizational innovativeness. These relationships are examined through an empirical investigation of 291 large Spanish companies. Our analysis found that if the organization considers the establishment of an unlearning culture as a prior step in the utilization of organization memory or the technology infrastructure through organizational innovativeness, then organization memory and technology have a positive influence on the conditions that stimulate organizational innovativeness.

Keywords: Unlearning, technology, organizational memory, and innovation

Virtual Communities of Practice: Investigating Motivations and Constraints in the Processes of Knowledge Creation and Transfer

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Abstract: With accelerated market volatility, faster response times and increased globalization, business environments are going through a major transformation and firms have intensified their search for strategies which can give them competitive advantage. This requires that companies continuously innovate, to think of new ideas that can be transformed or implemented as products, processes or services, generating value for the firm. Innovative solutions and processes are usually developed by a group of people, working together. A grouping of people that share and create new knowledge can be considered as a Community of Practice (CoP). CoP's are places which provide a sound basis for organizational learning and encourage knowledge creation and acquisition. Virtual Communities of Practice (VCoP's) can perform a central role in promoting communication and collaboration between members who are dispersed in both time and space. Nevertheless, it is known that not all CoP's and VCoP's share the same levels of performance or produce the same results. This means that there are factors that enable or constrain the process of knowledge creation. With this in mind, we developed a case study in order to identify both the motivations and the constraints that members of an organization experience when taking part in the knowledge creating processes of VCoP's. Results show that organizational culture and professional and personal development play an important role in these processes. No interviewee referred to direct financial rewards as a motivation factor for participation in VCoPs. Most identified the difficulty in aligning objectives established by the management with justification for the time spent in the VCoP. The interviewees also said that technology is not a constraint.

Keywords: Virtual Communities of Practice, Communities of Practice, knowledge creation, knowledge transfer, Innovation
Towards a Web 2.0 Scientific Publishing Industry

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Abstract: In the knowledge based economy, collaborative ways of generating and managing knowledge has been growingly seen as promising means to foster innovation, economic growth and social development in several applied fields. Thanks to the diffusion of the Internet, the Web and social network applications, people interact and collaborate in order to create, share and disseminate pictures, video and knowledge. We move from the observation that while the Internet and the Web are positively affecting both social and business aspects of life, their influence on the academic publishing sector seems to be still marginal. While scholars are still debating on the impact of the Open Access paradigm and its economic sustainability, several Web 2.0 applications might radically affect scholarly publication and in particular the way in which knowledge is produced and disseminated. Moreover, many specific scientific publishing initiatives are facing on the Web. These are: PLOS one, ArXiv, Nature Network, SSRN and Sprouts. Although these initiatives are raising new collaborative issues on several aspects of scientific knowledge creation and dissemination, their effects are even less explored than Open Access. This paper explores the impact of the Internet, the Web and other collaborative platforms on the whole scientific publishing sector. This analysis shows that authors, readers and scientific publishers bear some interesting peculiarities which should be taken carefully into account in order to shed light on threats and opportunities of Open Access and Web 2.0 initiatives.

Keywords: Scientific publishing sector, Web 2.0, knowledge creation, dissemination, review and evaluation

Find Documents? No, Find People! How to Create Effective People Findability in Large Organizations

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Abstract: Traditionally, work on search and findability has followed a “document centric” approach. The huge interest in social media and social networks has changed the way we think about search and has increased the interest in people findability. Searching for people with the skills you need has a long way to go, both within companies and on the Internet in general. The reason for this is that searching for people is very different from document search, both in terms of ranking parameters as well as social implications. The article will explain how you can succeed with people findability in your organization.

Keywords: People search, people findability, large organizations

12 Steps to Successful Knowledge Management Implementation

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Abstract: Knowledge management initiatives often fail to live up to expectations and many result in failure. Unfortunately, many knowledge management initiatives fail because they have been introduced, simply because knowledge management has been recognised by senior management as a “good thing” and something their competitors are undertaking. This can lead to a knowledge management being appointed without any clear direction and knowledge management initiatives being undertaken without any clear purpose or measurable target criteria. To overcome these problems, a twelve step methodology for
knowledge management implementation is presented, illustrated with a series of small case studies. Starting from a problem audit, subsequent steps ensure a baseline measure for improvement is identified, and a comprehensive, costed solution to a recognised problem is designed which is capable of gaining buy-in from both management and the system users. The system is designed with user involvement and must consider the operation of the proposed system as well as the implementation. Subsequent to the implementation, a review process involving the identification of measurable cost-benefits can become the basis for future expansion and roll-out of knowledge management and can become the first steps in the building of a comprehensive knowledge environment. The case studies illustrate the value of each step in the methodology with examples of good and bad practice drawn from the author’s previously published experiences. This paper brings the lessons from these case studies together to form the twelve step methodology which ensures knowledge management is implemented using sound business principles of cost-benefit analysis and return on investment, and established engineering principles of breaking larger projects into smaller projects carried out incrementally with testing carried out at each stage. It is recommended that companies follow these principles and the proposed twelve step methodology in order to achieve successful knowledge management implementation in their own environment.

**Keywords:** Systems implementation, success, failure, business case, software engineering

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**Supporting Knowledge Management in Project Settings: the Role of Knowledge Oriented Groups**

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**Abstract:** Organizations are increasingly using project teams to accomplish specific tasks and to increase flexibility. Recent studies on Knowledge Management and organizational learning in project environments have emphasized the difficulties of learning from and across projects. Following are the main problems of managing knowledge and improving learning processes in project-based organizations: (1) lack of time and reflection at the level of the project team (project-time pressures and temporariness of project teams can inhibit learning processes); (2) the trade-off between centralized vs decentralized approaches in the knowledge creation, validation and dissemination processes (tendency to centralize learning and to defer learning to future points in time); (3) the reduced interactions with colleagues with similar competencies. Therefore, an inherent contradiction exists between organizing to meet short-term, project related objectives and the longer-term developmental nature of organizational learning processes. From an organizational point of view the problems of managing connections among people with the same area of expertise and people with different areas of expertise (generally collected around a project) are critical. The knowledge capture, transfer and learning in project settings rely heavily upon social processes. This situation emphasizes the value of considering a community-based approach to manage knowledge. Several authors suggest to add a new “dimension” (a “home” for learning, and development of specialized/technical competencies) following a “crossing-approach” that leads to design organizational solutions in which project teams (focused on their strengths eg. outputs and market segments) and *Knowledge Oriented Groups* (KOGs- focused on learning and knowledge sharing), like Communities of Practice (CoPs), quality circles, knowing communities, etc. coexist. The aim of this paper is to investigate the evolutionary path and the critical issues in designing and implementing these innovative organizational solutions based on the introduction of KOGs (e.g. group design, reward system, participation modes, support
mechanisms, formalization degree). We conducted three in-depth case studies in three large Italian IT consulting firms: these firms are organized by projects and have introduced different kinds of internal KOGs in order to improve the management of internal and external knowledge. By analyzing the different stages in the lifecycle of these organizational solutions it is possible to show some general and practical insight for organizational design and support of KOGs.

**Keywords:** Project-based organization, Knowledge Oriented Groups, knowledge sharing, groups design

### A Differential Game for Supply Chain Collaboration on Knowledge Accumulation and Management

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**Abstract:** This study demonstrates that knowledge accumulation and management represents a primary source of competitive advantage for the supply chain (SC). Although it is well recognized that knowledge management helps firms to face global competition and attain success, few contributions extend their investigations to SCs. Moreover, as knowledge management is a dynamic phenomenon, its analysis in a SC environment needs the application of appropriate tools. This paper introduces a theoretical game of SC in which two firms collaborate jointly on knowledge accumulation and management. While it is well known that dynamic formulations provide additional insights, information and value than static ones, we demonstrate that this statement is contradicted when considering knowledge management. The results attained are of significance for both practitioners and theorists. The paper shows the economic benefits obtainable when considering knowledge management as a SC issue, and further reveals the effectiveness of investigating knowledge management by means of dynamic tools.

**Keywords:** Knowledge management game, knowledge accumulation, static game, dynamic game, supply chain management

### Near-Duplicate Detection Based on Text Coherence Quantification

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**Abstract:** In a knowledge-driven world confronted with vast information overload, well-optimized retrieval of relevant information has become increasingly important. Document management systems often deal with large collections of documents, many of which reuse parts of other documents. This results in the usage of unnecessary disk space as well as the existence of documents containing nearly the same content but without reference to each other. The authors suggest an approach in which a document is treated as an array of pointers to coherent pieces of text, here called subtexts. A subtext is coherent if it is related to a single topic. The performance of document management systems in terms of, for instance, search speed could be significantly increased if redundant subtexts can be identified and deleted, and documents can be constructed by referring to the same pool of subtexts. This paper presents a set of techniques to automatically identify these (near) duplicates of subtexts. To identify these duplicates a document is first subdivided in coherent document subtexts related to their topics. These techniques are based on stem or term chains linking document entities, such as sentences or paragraphs, based on the reoccurrences of stems or terms. The number and positions of these reoccurrences in the
document are used in a weighting function to quantify the coherence of a document. Applying this function on a document results in a coherence graph of the document linking its entities. Graph partitioning techniques based on the spectral properties of the coherence graph are used to divide this graph into a number of subtexts. The most suitable number of subtexts is determined by resorting the document entities based on the order explained by the eigenvector of the second largest eigenvector. The resulting subtexts are an aggregation of (not necessarily adjacent) entities. A comparison function based on the coherence graph and the term chains are used to quantify the duplicate relationship between two documents. This function can be executed on the complete documents or the extracted subtexts to retrieve the near-duplicate documents. Therefore the technique is capable to not only identify near-duplicate documents of similar length, but also reused small subtexts in larger documents. Performance tests are conducted in test environments based on books of the Gutenberg project to prove the technique’s capabilities. The relevance of these techniques for knowledge management is further explained.

**Keywords:** Information retrieval, text mining, spectral graph partitioning

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**Concept Definition in Knowledge Management: The Development of an Organizational Memory Scale**

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**Abstract:** Theorists and researchers in the field of Knowledge Management are frequently frustrated by issues with concept definition, as illustrated by the following comment “there remains disagreement on methodologies, definitions and processes” from the summary article “Issues Raised at ECKM, 2008”. How can we clearly define constructs of interest? How can we further research and understanding in the field if we are speaking with different vocabularies? This paper illustrates some of these issues by describing the concept definition process involved in the development of an organizational memory scale. The example being used to illustrate these issues was a self-report scale of organizational memory developed to survey experienced workers’ attitudes to mentoring others to pass on their knowledge. The current research sought to differentiate between the types of organizational knowledge that experienced workers have and the possible relationships these have with attitudes pertaining to knowledge transfer via mentoring. Defining the construct to be measured is the vital first ingredient in scale development. Many researchers lament that the concept of organizational memory is a “rather loosely defined and under-developed concept” (e.g. Johnson & Paper, 1998, p.504), and this hints at the challenges that concept definition can entail. Furthermore, in the early stages of this particular project it became clear that the organizational memory scale had similar aims, and was able to borrow from, an existing scale of organizational socialization (Chao, O’Leary-Kelly, Woolf, Klein & Gardner, 1994). This paper describes the concept definition process involved in the development of the scale along with results from the exploratory factor analysis. There is a discussion of the relative contribution that the organizational memory scale makes alongside the existing measure of socialization (Chao et al., 1994), along with goals for further development.

**Keywords:** Organizational memory; socialization; organizational learning; scale development; knowledge transfer; concept definition
Building and Sustaining Competitive Advantage Through Knowledge Management

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Abstract: Companies today are in an endless struggle to differentiate themselves from competitors. Globalization, technological development, and a great many other factors have forced these companies to compete in a complex and challenging environment. According to the resource-based view of the firm (RBV) knowledge is becoming the most valuable strategic resource a company has. Land, labour, capital and traditional assets are no longer the most critical asset for a company, instead knowledge has become the most important tool in shaping the firm's ability to create, and sustain its competitive poison. Based on the importance of knowledge and knowledge management (KM) and by taking into consideration the fact that knowledge management is still a relatively new management phenomenon, research in KM within the organization context has grown over the last years in many direction framed by a lot of theories such as the organizational learning, the resource based view of the firm, the knowledge based view of the firm, competences-based view and capability perspective, all these perspectives mentioned the link between capabilities and performance. Hence knowledge management is recognized as a comprehensive process that eventually creates a unique capability of supporting human creativity and the firm's cycle of innovation embodied in firm's process and technologies. This study is an attempt to build on and add to the current body of knowledge in the field of knowledge management by investigating and illustrating all the different factors that might have an impact on the usage of knowledge management as a valuable strategic tool for gaining a sustainable competitive advantage. Furthermore, the study will use these different factors to construct an integrative framework that helps researchers and practitioners in understanding how a company can build and sustain the competitive advantages through KM, the study also will provide great benefits for entrepreneurs, policy makers, practitioners, researchers, and educators though providing a clearer view and deep understanding for all the issues related to the use of knowledge management to build and sustain a sustainable competitive advantage.

Keywords: Knowledge Management (KM), Knowledge-Based View of the Firm (KBV),

Intra-Firm Knowledge Sharing Barriers: State of the art

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Abstract: Knowledge management has been identified as a practice for rapidly and effectively adapting in ever-changing environment. Within KM, knowledge sharing is considered a critical process for innovation generation and organizational efficiency. Indeed, the knowledge transfer process is often obstructed by the presence of barriers. Several factors has been identified by researchers; however literature lacks of a comprehensive review and categorization of these barriers. The paper analyzes the results of the researches on intra-firm/institution knowledge transfer in different disciplinary areas. The barriers/facilitators are categorized under five main dimensions: nature of knowledge, psychological, social, organizational and technological factors. The context-specific and complex nature of knowledge sharing fosters the proposition of a new theoretical model for knowledge sharing studies.

Keywords: Knowledge sharing, Barriers
Sectoral Differences in Knowledge-Management Application in Hungarian Enterprises

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Abstract: No single knowledge-management (KM) application can meet all the requirements of all companies, and earlier research has shown that certain activities and business models need different forms of KM strategy, technology and implementation. Following a theoretical review, we aim in this study to examine KM applications in Hungary and their sectoral characteristics, and a short summary of similar domestic research provides an opportunity to make comparisons with earlier experience. In our survey, which was conducted in April 2008, we have attempted to identify characteristic features of domestic companies in the field of knowledge-management on the basis of their main activity. A total of 695 completed questionnaires does, we feel, ensure that accurate and relevant conclusions can be drawn in relation to Hungary. When considering intellectual capital, we pay special attention to showing both internal and external structures and individual competencies also. We provide information which, we feel, can be helpful in the planned development of individual competencies.

Keywords: Intellectual capital, internal-external structures, individual competencies, applied technology, KM survey in Hungary

Knowledge Sharing Investigation: What is the Knowledge Sharing of Managers Like?

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Abstract: Why do people share their knowledge? Who and what inspires them to do it especially within organizations in Central-Eastern European countries? The authors, at the University of Pannonia, Department of Management in Hungary, have conducted an empirical survey, which has investigated the characteristic features of knowledge sharing of managers, working under top managers at medium- and large sized enterprises. Beyond studies focusing mainly on the regions of the USA, Japan and Western Europe, there is barely any research work focusing on knowledge sharing in Central-Eastern Europe. This increases the importance of this research. The aim of the research was to reveal the factors which affect the maturity of knowledge sharing of these managers and to measure the role of these managers in the maturity of knowledge sharing. Before showing the initial results of our survey which was conducted before the beginning of and during the economic crisis, our paper first presents the growing importance of knowledge sharing in these days by giving a brief description of knowledge and knowledge sharing. The central part of this paper makes an attempt to compare the results of two assumed influencing factors of our survey, and their effect on the maturity of knowledge sharing.

Keywords: Knowledge, knowledge sharing, culture, leadership
Making the Development of Technological Innovations More Efficient: an Exploratory Analysis in the Biotechnology Sector

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Abstract. The current study analyzes the processes involved in obtaining technological innovations. Conclusive results are lacking in the literature, so this work defines and empirically tests a model of the relations between the firm’s innovative capacity and the different ways of accumulating knowledge and the decision whether or not to codify it. Also, the model takes into account whether the innovations obtained are radical or incremental. The empirical study uses a sample of Spanish biotechnology firms, and the results show that accumulating knowledge using internal sources and not codifying it significantly improves the firm’s capacity to develop radical innovations. The results also show that knowledge codification speeds up the development of incremental innovations. The relation between incremental innovations and the sources of knowledge is not so clear, although the results suggest the possible existence of a nonlinear relation between the two variables.

Keywords: Knowledge management, sources of knowledge, knowledge codification and technological innovation

Wikifailure: The Limitations of Technology for Knowledge Sharing

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Abstract: Currently there is much interest in the use of Web 2.0 technologies to support knowledge sharing in organisations. Many successful projects have been reported. These reports emphasise how the use of such technology has unlocked new pathways for knowledge transfer. However, the limitations of Web 2.0 technologies are not yet well understood and potential difficulties may have been overlooked. This paper reports a case study of a Wiki which was implemented to support a group of researchers. Although belonging to the same institution, the group members were relatively dispersed and their research areas were disparate. Nevertheless a short study showed that there were benefits to be gained from sharing knowledge and that many of the researchers felt that a Wiki would be a good mechanism to support this. A Wiki was implemented and was initially very successful. A significant number of researchers contributed to the Wiki and almost all made use of it. However the usage declined over time and attempts to stimulate interest by providing incentives for contributions were unsuccessful. One year after launch use was minimal. A qualitative study was carried out to understand the reasons for this decline in use, and is reported in this paper. Responses suggest that two factors may have been particularly significant in explaining the failure of the system. One problem appears to have been a lack of critical mass. Only a small proportion of users are likely to contribute and there may be a threshold size for a community to be able to support a vibrant Wiki. Time also seems to have been an issue. Some respondents said that they simply were too busy to contribute to or use the system. Organisations which are considering the use of Web 2.0 technologies to support a knowledge management initiative should consider the likely impact of these factors in their own situation. Although technologies such as Wiki have great potential there are also pitfalls in undertaking such projects which are not yet well understood.
Simulation of Knowledge Management Processes in Multi-Agent Systems

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Abstract: Knowledge management is a collection of processes of gathering, refining, organizing, and disseminating knowledge through which organizations generate value from their intellectual and knowledge-based assets. In this paper we show how to simulate knowledge management processes in multi-agent systems in a process-based framework. The framework uses a computational model and is formalised in epistemic logic, capturing individual and group knowledge. We rely on identification of crucial processes which support knowledge exchange. The processes include: knowledge sharing, knowledge use, knowledge lock and knowledge acquisition. We support transfer of knowledge both between individuals or groups of individuals within an organization.

Keywords: Knowledge Management, process simulation, multi-agent systems

Managing Incompatible Impacts of Organizational Values on Knowledge Sharing

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Abstract: At any given time the two rival organizational values cooperation and competition coexist in any team and/or organization in different intensities and mix, depending on both internal factors (e.g., culture, task dimensions of accuracy and speed) and external factors (e.g., market and competitive forces). However, determining that desirable intensity and mix of these two values seems to be a challenging task in the current literature and no explicit method currently exists for measuring factors that may lead to determination of such desirable mix. Considering the crucial impacts of these values on organizational behaviours, this in turn may result in loss of efficiency and productivity in organizations. In this study a systematic review of current literatures in the areas of knowledge management, social psychology, organizational studies and Computer-Supported Cooperative Systems (CSCW) studies, is used to uncover a research theme for analysing the impacts of the two rival organizational values competition and cooperation on knowledge sharing behaviours through promotive interaction between individuals. Supporting the IT-culture conflict theory, this study is considered as a research theme which investigates the impact of culture on IT application and use. More specifically, by combining the goal interdependency theory of conflict, social learning theory, the internal organizational forces of competition and cooperation and the awareness net analysis, the present study deeply investigate the term tension between cooperative and competitive values and their impact on organizational behaviours. It then introduces factors that can assist in finding an optimal mix of the cooperative and competitive values in organizations at any given time. The present study also relates the above optimal mix/tension with the organization’s reward structure, the task dimensions of ‘speed’ and ‘accuracy’, group characteristics and organizational climate in order to draw inferences for attaining an optimal level of process awareness for individuals while performing their tasks within an organization.

Keywords: Organizational value, knowledge sharing, promotive interaction (PI), cooperation, competition, awareness
Do Problem Solving, Critical Thinking and Creativity Play a Role in Knowledge Management? A Theoretical Mathematics Perspective

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Abstract: Litschka, Markom, Schunder (2006) state that “…a knowledge-based economy requires new approaches in management especially with employee oriented actions, because workability, well-being, and creativity of employees determine the success and sustainability of an organization.” Such approaches have to be grounded on established learning theories for life long learning which are conducive to knowledge creation and knowledge acquisition. Situated learning (Lave & Wenger, 1997), constructivism (Piaget, 1971; Vygotsky, 1978), behaviourism (Thorndike, 1915; Skinner, 1958) and cognitivism (Wertheimer, 1912; Kohlberg, 1972; Mezirow, 1962, all cited by Hergenhahn and Olson (1997: 29-48) have dominated education for more than eight decades. Though each theory has made valuable contributions, management of knowledge requires higher order thinking skills such critical thinking, problem solving and creativity on the part of the manager of the organisational knowledge and the part of the knowledge creator. The importance of these three skills, especially for the last two decades, have not only been accepted as important cognitive skills by educators and employers, but they also form part of the critical outcomes in American educational policies (American college personnel association, 1994 cited by King & Baxter-Magolda, 1996) as well as in South Africa (SAQA, 1998; the White Paper on Further Education and Training, 1998: 21-23). What is suggested here is a new approach to knowledge management, the psycho-pragmatic approach, which makes use of theories of learning of mathematics as problem solving, critical thinking and creativity form the essence of knowledge acquisition (Schoenfeld, 1987; Skemp, 1977). Mathematics has been recognised as a subject that enhances higher order skills because on the one hand requires abstract thinking on the other promotes use and application of knowledge (Pushkin 2007; Alonso, 1992; Forinash, 1992). This new approach makes use of psychological learning theories for generation of knowledge and pragmatism for application of such knowledge. It is of cyclic nature as well as of spiral nature based on the idea of Nonaka and Konno (1998) model of knowledge and of Bruner’s (1976) spiral curriculum.

Keywords: Knowledge Management, problem solving, critical thinking, creativity, mathematics, psycho-pragmatic

Steps to Consistency in Management Practice Across Multi Organisation Construction Project Teams

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Abstract: Industries such as Medicine are investing heavily in the collection and common provision of practice knowledge so that there is a consistency of service provision. Construction has yet to do this in such a consistent way. There have been Best Practice Programmes in the past and there is currently the Knowledge Transfer Network but these have largely been based on providing links between knowledge users and providers rather than a consolidation of the knowledge into effective guidance. This paper describes an approach developed to overcome the problems and issues in the construction industry, particularly in the management of projects. Failings on projects of the team to be working to the same management standards, procedures and protocols often leads to poor performance. This has led to the call for a consistent approach to construction project
management that draws upon current best practice and demonstrates how to avoid such project disasters by doing the right things at the right time. The approach developed here is similar to that in the Map of Medicine. There a decision map is set out relating to diagnosis and with treatment guidance presented at each point in the map. For construction management a process map of the complete construction process has been set out and at each activity point a pull down box delivers guidance and best practice for undertaking the task. The guidance has been culled from research, practice guidelines, case studies and relevant practice. The difference in this approach from corporate knowledge management is that the guidance is an independent consolidation of the industry’s expertise presented in an easily assimilated and usable form. The barriers to implementation of knowledge management within construction enterprises have been reviewed and the approach developed here is designed to overcome them. Furthermore the issues of getting consistency across the many organisations involved in a construction project has also been addressed with this approach.

**Keywords:** Knowledge Management, process maps, consistency, construction

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**Improving Extraction and Transformation in ETL by Semantic Analysis**

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**Abstract:** Extraction, Transformation and Loading processes (ETL) are crucial for the data warehouse consistency and are typically based on constraints and requirements expressed in natural language in the form of comments and documentations. This task is poorly supported by automatic software applications, thus making these activities a huge works for data warehouse. In a traditional business scenario, this fact does not represent a real big issue, since the sources populating a data warehouse are fixed and directly known by the data administrator. Nowadays, the actual business needs require enterprise information systems to have a great flexibility concerning the allowed business analysis and the treated data. Temporary alliances of enterprises, market analysis processes, the data availability on Internet push enterprises to quickly integrate unexpected data sources for their activities. Therefore, the reference scenario for data warehouse systems extremely changes, since data sources populating the data warehouse may not directly be known and managed by the designers, thus creating new requirements for ETL tools related to the improvement of the automation of the extraction and transformation process, the need of managing heterogeneous attribute values and the ability to manage different kinds of data sources, ranging from DBMS, to flat file, XML documents and spreadsheets. In this paper we propose a semantic-driven tool that couples and extends the functionalities of two systems: the MOMIS integration system and the RELEVANT data analysis system. The tool aims at supporting the semi-automatic definition of ETL inter-attribute mappings and transformations in a data warehouse project. By means of a semantic analysis, two tasks are performed: 1) identification of the parts of the schemata of the data sources which are related to the data warehouse; 2) supporting the definition of transformation rules for populating the data warehouse. We experimented the approach in a real scenario: preliminary qualitative results show that our tool may really support the data warehouse administrator’s work, by considerably reducing the data warehouse design time.

**Keywords:** ETL, semantic analysis, data warehouse
Which Personal Values are Most Relevant to Knowledge Development Through e-Learning? Insights From a Delphi Study

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Abstract: This paper focuses on one of the factors that influences personal knowledge development in e-learning environments, namely personal values. It outlines a Delphi study in which the participating experts were asked what they consider to be the most relevant value types of the ten individual-level values of the Schwartz Value Survey (SVS) in the context of personal knowledge development in an e-learning environment. It is argued that due to the contextual situatedness of learning processes, the value types of the SVS differ in terms of importance and relevance to knowledge development through e-learning. In order to determine which value types are particularly relevant, a Delphi study was conducted. Particular care was taken to identify experts from the three main topic areas involved, namely knowledge management, personal values, and e-learning. The experts were presented with definitions of all ten value types and asked to identify a maximum of five types as being particularly relevant for knowledge development through e-learning. The results of the Delphi study show that the ten value types can be grouped into three clusters in terms of differing degrees of relevance for knowledge development in the context of e-learning. A high consensus was found among experts in that Achievement, Stimulation and Self-Direction were regarded as being particularly relevant in the investigated context. Less agreement was found for the value types of Hedonism, Benevolence and Conformity, which are considered to be particularly relevant by roughly a third of respondents. Finally, Tradition, Universalism, Security and Power are only relatively rarely regarded to be particularly relevant. The results suggest that the impact of personal values in a given context differs due to the characteristics of that particular situation. The findings help to understand the relevance of personal values to knowledge development through e-learning and the implications for the design of effective knowledge management systems as there is no one right way of designing them for different people, particularly if they are from different countries. An awareness of personal values and their impact on knowledge development is crucial to make knowledge management initiatives more effective and successful.

Keywords: Knowledge development, e-learning, values, Schwartz Value Survey, Delphi study

Managing Knowledge About Customers in Inbound Contact Centres

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Abstract: Contact centres have become a major industry growth sector in many countries. They often aspire to be “customer care centres”, but bad experiences have led many to disagree with that phrasing. South Africa possesses many favourable attributes for offshoring of contact centres from elsewhere, and this is seen as an important strategic area of economic growth and job creation. To gain business it is necessary for these contact centres to provide both efficiency of operation and customer satisfaction. A key aspect is availability to contact centre agents of information about the customer from existing organizational systems, as well as past communications with that customer through channels including telephone, email, text messaging, the post, and completion of online menus. Customer service and the customer experience are affected by the
consistency, accuracy, timeliness and integration of all that information, and the ability of the contact centre agent to find and apply it appropriately as valuable knowledge in the context of customer questions and requests. The aim of this research was to gain more understanding of the varied problems customers face when requesting information and action from an inbound contact centre, and to assess how their experiences can be affected by issues relating to the generation of, management of, and agent access to, knowledge about those customers. It draws on customer incidents obtained from a customer service website, which provides detailed comment (compliments and complaints) from customers and responses from organizations. Customers can (anonymously) express their level of satisfaction, or lack of it, after contact with the organization. A thematic analysis was used to find key themes and linkages in the incidents studied, and examples of each are given. Conclusions are drawn on the main problems inhibiting sound use of customer knowledge by agents in inbound centres, and a model of “information-leakage” that summarises the various problem areas is suggested.

**Keywords:** Contact centre, customer, knowledge, information, integration, channels, CKM, CRM

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**The Role of Knowledge Management in Cultivating Technology Innovation and Entrepreneurship**

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**Abstract:** The process of technology innovation can be approached with a perspective that combines strategic business planning and engineering acumen. Technology innovation is the process by which technological ideas are generated, developed, and transformed into new business products, processes, and services by an entrepreneurial enterprise. This innovation is thus used to make profit, establish marketplace presence, and be a competitive advantage for the innovating enterprise. Being able to select the “right industry”, that is, to identify the dimensions of an industry that is “more favorable” for new technology firms than other industries, is a challenge that must be planned strategically from the initiation of a business idea. Being able to identify potential opportunities from changes in environmental, social, regulatory, and technological factors is also important. Taking advantage of technological transitions is considered a strategic issue faced by innovating entrepreneurs. This paper presents the issues faced by twenty technology-based ventures created by engineering students-turned-entrepreneurs with backgrounds from various engineering disciplines. The innovation process is discussed in regards to how these students-entrepreneurs use knowledge about new ventures, innovation, and strategic positioning. Namely, Foster’s technological s-curve is correlated with Ansoff’s product-market matrix to categorize technology-based entrepreneurial opportunities. The dimensions of an industry, i.e. whether new products are introduced into an existing market or an existing product is launched to reach a new market, indicate the type of viable environments in which disruptive technologies can succeed. In addition, the paper discusses the role that current trends have in positively affecting technology transitions, as disruptive technologies are usually identified only after the effects of these trends on its particular industry are experienced. Thus, a dual-perspective approach of applying both engineering design and strategic management is used. Finally, the effect that the limited-market environment of Newfoundland and Labrador (NL) in Canada has on these twenty technology-based ventures in terms of a product-market view of strategy and a resource-based strategy is discussed. The difficulty in assessing the potential success of technological opportunities early in their life makes it even more imperative for
entrepreneurial engineers to apply an integrative approach to knowledge management and business strategy.

Keywords: Technology, entrepreneurship, innovation, education, engineering

Exploring Knowledge Work Practices and Evolution in Distributed Networks of Practice

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Abstract. This paper derives from a longitudinal study conducted in a multinational company. Through an interpretive case study approach, we have explored the phenomenon of knowledge networking in distributed work. More specifically, we have focused on the evolution patterns in a particular knowledge networking structure denoted as distributed networks of practice. The paper conceptualizes this kind of network of practice as an ICT facilitated dynamic relationship of participants that are geographically and temporally dispersed from one another, and who are sharing and creating knowledge related to their daily work practices and business problems. Three different categories of networks were identified 1) problem solving networks, 2) business improvement networks, and 3) innovation networks. Findings demonstrate that the networks evolved differently over time, and the study identified four distinct evolution patterns comprising 1) devolution in terms of short life cycle and dissolution, 2) recursive patterns where new ad-hoc networks emerged from the mother network, 3) integration of knowledge practices through cross-network proposals, and 4) innovation and expansion in scope and size. While previous studies have suggested fixed models for how a life cycle of a community takes place, this study however identified four dissimilar evolution patterns. Thus, these findings challenge life cycles models suggested in traditional community of practice research. The paper utilizes an information infrastructure perspective to provide an improved understanding of the evolution patterns within these networks by viewing them as ecological social structures facilitated by a technological infrastructure. Through social lines of practice and effective knowledge sharing, the participants created an infrastructure of knowing within the organization and managed to alter organizational practices through evolution. The paper illustrates how a knowledge networking structure as such may facilitate distributed work practices and knowledge activities across temporal and spatial boundaries.

Keywords: Distributed network of practice, knowledge activities, evolution patterns, knowledge networking infrastructure

Knowledge Management and the UK car Manufacturing Industry: Preliminary Study Survey

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Abstract: Knowledge Management (KM) has grown and gathered importance in the field of business and management, particularly in Europe and North America, as well as in the UK. Despite much empirical research into KM in other industries, such as pharmaceuticals, oil and gas, financial and consulting services industries, little is known about the practice of KM in the UK car manufacturing industry. This paper presents the findings of a preliminary study survey conducted at 13 UK car manufacturing organisations, which aimed to redress this imbalance with the main concern being to provide a sound level of understanding and an overview of KM practices within the industry. Given that the field of KM is very diverse, with a wide variety of approaches, the
primary objectives of the preliminary study were substantial in order to obtain a sound understanding of the UK car manufacturing industry experience of KM. The industry presents itself in today’s knowledge economy, includes large organisations in terms of number of employees and turnover and operates in a highly competitive environment that is driven, to a significant degree, by innovation and continuous improvement. It would be significant, therefore, to identify the incidence of certain KM practices and behaviours in such an industry. While the findings provided a good level of understanding of KM practices that were investigated through the awareness, familiarity, contemplation and implementation of KM, they also managed to identify the proportion of KM adopters and non-KM adopters within UK car manufacturing industry. Building on these distinctions, a theoretical framework named ‘STAGES: Towards a KM Implementation Roadmap’ was developed that enabled an understanding of the stages of KM practices achieved by all respondents and also further developed comprehension of organisational experiences in KM. The paper concludes with the results, indicating that KM is both recognised and practiced in the UK car manufacturing industry, although, a wide variety of practices were identified under the overall KM label.

Keywords: Knowledge Management, UK car manufacturing industry, survey, framework

Limitations of Network Analysis for Studying Efficiency and Effectiveness of Knowledge Sharing

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Abstract: To identify possible deficiencies in knowledge sharing several authors proposed to apply a network perspective. In this perspective, the knowledge transfer relations between people are studied. The proposition in these researches is that the position of an individual in a network or the specific clustering of people into groups serves as an indicator concerning the efficiency or effectiveness of knowledge sharing. However, previous research learned that a network perspective might not reveal all deficiencies as it mainly focuses on the tacit dimension of knowledge. In this research, we seek to validate one of the network approaches to study the tacit dimension of knowledge sharing, which is called Knowledge Network Analysis. To validate the Knowledge Network Analysis technique we conducted a case study, at an international product software supplier. A knowledge network analysis was conducted and the outcome of this analysis is compared with a qualitative study based on interviews and direct observations that focused on the tacit as well as the explicit dimension of knowledge. To analyze the qualitative data we developed a new model called Knowledge Sharing Environment Model (KSEM), which is capable of identifying and quantifying knowledge sharing bottlenecks. A total of eight bottlenecks identified by KNA were analyzed by means of the KSEM. Hence, six out of eight bottlenecks were validated. This case study demonstrates that Knowledge Network Analysis is a good tool for the identification of bottlenecks. However, it was suggested to combine the Knowledge Network Analysis with another research method such as the KSEM to validate and study the causes behind the identified bottlenecks.

Keywords: Knowledge Management, knowledge sharing, knowledge network analysis, social network analysis, case study
Predictive Business – Exploring the Potential for Transformation

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Abstract: This paper focuses on predictive business. Predictive business is seen as both an outcome and a process. On the outcome side, predictive business means the ability to prevent or mitigate the negative impacts of undesirable events or the ability to support or accelerate desirable events. Predictive business is also a transformation process, which is only possible under certain conditions. Based on the literature and interviews, three crucial elements for successful transformation were recognized; (i) the identification of the driver for transformation, (ii) the creation of the vision for transformation, and (iii) the capacity to execute transformation. These three elements were further divided into 11 sub-elements: (i1) increasing networking, (i2) changing customer needs, (i3) development of the information technology, (i4) raising the knowledge economy, (ii1) strategic benefits, (ii2) transactional benefits, and (ii3) informational benefits, and (iii1) strategic capabilities, (iii2) management capabilities, (iii3) knowledge capabilities and (iii4) operational capabilities.

Keywords: Predictive business, information and knowledge management, operative management

Modelling and Mapping Tools to Help Communication and Knowledge Sharing in New Hospital Projects

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Abstract: As one of the five core knowledge activities, identify, create/generate, store, share/transfer, (re)use, knowledge sharing is an important activity “responsible” for transformation of the tacit knowledge into explicit. Tacit knowledge often remains “stored” into people’s brains or in the team or organizational routines without even having been explicitly described, causing misunderstandings, misinterpretations and wrong decision makings. Even though through information and communication technology individuals and teams can access some stored data about some aspects of their current situation, still a structured knowledge which could be easily communicated should be available to support knowledge sharing. Sharing knowledge is not as simple as it is expected to be especially in projects where different teams with different backgrounds, cultures and knowledge are involved to achieve certain goals. The use of some communication techniques and tools to share knowledge is more than necessary but very often they fail to extract the specific required knowledge and by that to support decision making. Methodologies and tools are required to support the collective analysis of all the structured and unstructured system components and communication between the teams, forming a unique collaborative language and by that effective knowledge sharing which saves time and money of covering mistakes from bringing wrong decisions. This paper presents the use of three modelling and mapping tools that could be suggested to overcome the communication problems and to ease knowledge sharing: Workflow Process Model (Swimlane diagram), Dependency Structure Matrix (DSM) and Cognitive Maps. Their use was tested in a real design process where a new hospital has to be constructed and its technical functions have to be managed for thirty years by the same organizational actor that is now responsible for the project. The goal of this intervention is to propose a methodological background as a support of the design process, to help specific knowledge to be available to all the involved teams. The tools were chosen in relation to these aspects: to be easy
Customer Knowledge Management and Demand Fulfilment in Global Supply Chains

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Abstract: Many organisations, especially those with a global presence, continuously strive to improve their supply chain (SC) performance which directly relates to effectively satisfying customer demand. Croxton et al (in Taylor and Fearne, 2006) note that management of demand is increasingly recognised as a key issue in improving the efficiency of SC operations. Responding to global demand requires delivery of the right product in the right quantity at the right time. Satisfying those requirements is a complex task for these organisations. Vollmann et al (2004) suggest that this complexity encompasses forecasting demand, synchronising it with production, procurement, distribution, and co-ordinating all activities with manufacturing capacity. These suggestions may provide abstract answers to effective demand fulfilment but finding specific and appropriate ways to achieve this is a key challenge for today’s global organisations especially when there are rapid changes in market demand. This paper focuses on the significance of managing customer knowledge in effective demand fulfilment within global SC’s. In this context, the authors refer to the ‘customer’ as an individual or organisation who is involved in supply chain (e.g. a 1st tier supplier can be a customer to a raw material supplier). Based on an empirical study, this paper presents the challenges and avenues of effective demand fulfilment in global SC’s by utilising customer knowledge. Firstly, the paper will provide a critical review of the extant literature on the role of customer knowledge in global SC management with specific emphasis on the way that this impacts on demand fulfilment. Secondly, it presents findings of an empirical study which was carried out to: 1) understand the role of customer knowledge management in demand fulfilment and 2) find avenues to utilise customer knowledge in effective demand fulfilment. This study constitutes ten in-depth case studies of large organisations with global SC operations.

Keywords: Customer knowledge management, demand fulfilment, supply chains

Knowledge Management and Cultural Issues in Iran

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Abstract: Successful knowledge management systems in the organization require maximum cooperation and coordination between employees in the company and the ability to bring customers’ information into organization. Knowledge management includes three important dimensions: people, technology and culture. The coordination between these factors will create a system in which data will be gathered from internal and external environment, will be processed and converted into information and at last, a unique and inimitable knowledge will be produced that will be shared between all of the company’s members. All of these stages need strong coordination and great confidence between
employees in the organization and doing work through integrated teams; something that is
the base of organizational activities in new network economy. But in Iranian organization,
people do not like to be in a team and they prefer to go ahead individually. Of course, this
approach has its roots in the Iranian’s history and their value systems. Moreover, there are
other barriers for knowledge management in the Iranian organizations such as power
distance between managers and subordinates, lack of a cultural mechanism for knowledge
sharing and so on. This article tries to discover the relation between culture and successful
knowledge management systems in Iranian culture.
Keywords: Knowledge Management, culture, Iranian culture

Ways of Knowing: the Effect of Data Structures on
Epistemology

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Abstract: Our perception of the world is, at least in part, created by the ways in which
information is presented to us. In the context of information systems, the possible ways in
which information can be presented is determined by the way the information is structured
and stored in the first place. The type of data structure used and the actors involved in
creating that data structure will afford freedoms and place limitations on the end user in
ongoing formulation of their “world view”. This paper uses an emerging theory of the mind
which positions it as both embodied in the brain and disembodied using technology to
show that data storage spaces (systems) modulate the user’s mind in particular ways. It is
thus that the epistemology of the user is affected. This paper examines how data stored in
spreadsheets, relational databases, on the web, and using Semantic Web technologies
affects the epistemology of the user. The analysis is carried out in part through the lenses
of philosophers Deleuze and Guattari’s concept of smooth and striated spaces. There is
currently much debate on whether knowledge should be constituted by “Web 2.0” type
techniques whereby the user is able to easily create and manipulate data structures or
whether a more structured method such as the Semantic Web is needed. This paper
contends that both these methods are polarised and future data storage spaces need to
consider the balance between the agency afforded to users in creating subjective,
contextually driven realities with the need to maintain overall system order.
Keywords: Epistemology, data structures, cyborg, Semantic Web, Deleuze

Monitoring Progress in Managing Knowledge – an Emerging
Agenda

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Abstract: Knowledge management (KM) is a diverse and complex discipline. It is both
about people and technology and its implementation in modern organisations is rarely just
about just one these. Even the meaning of KM is contextual, depending on the unique
situation of an organisation. Consequently many standard activities are not attended to as
normal management practices. We believe that evaluation and monitoring of KM are
largely neglected activities. The authors’ research and practitioner perspectives on
knowledge management have combined here to explore an often-neglected aspect of
knowledge management – monitoring, or evaluating, its impact. We aim to develop a
research agenda and so engage others in this field of enquiry. The paper draws on
literature studies as well as consultancy experiences over several years. The work that
does exist has often been ad hoc, although we have found three types of approach in the literature study we have conducted thus far. Here we focus initially on three fields as the basis of a systematic approach to evaluating and monitoring the impact of knowledge management: knowledge management maturity models, strategic alignment and asset management. One KM maturity model is discussed here, although others exist in the literature. KM maturity models appear to be decoupled from strategic organisational goals and progress is bounded by a knowledge management ‘journey’. Impact is implied and not explicit although perhaps this approach is consistent with the notion of ‘monitoring’. Evaluation, however, suggests a conceptually different approach and one that is rooted in terms of impact assessment. In this sense, knowledge management needs to be seen to contribute to organisational key performance indicators. One such model is explored here although more research is required as to the extent of its use and its contribution to strategy. Capitalisation of knowledge focuses on assessing the value of an organisation over and above its financial value as reported in traditional accounting terms. Three different models are discussed here, although several others can be found in the literature. Although the research underpinning this paper is still in its infancy it is clear that research opportunities can be identified even at this early stage. Issues are raised here to provoke debate: no definitive conclusion can be offered as this research is ongoing.

**Keywords:** KM evaluation, KM monitoring, knowledge management maturity model, strategic alignment, asset management

**Knowledge Manipulation in Inter Organizational Networks: a new Role for Brokers**

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**Abstract:** Although the diffusion of knowledge between organizations is very important, the discussions on the sources of information diffusions are limited, and these discussions are not taken into consideration the organizational relation that affects the internal dynamism of organizations. However, the diffusion of knowledge is as important as the degree of manipulation of knowledge. For this reason, this study aims to construct a theoretical model for the manipulation of knowledge during organizational interaction process and to put forward the active effects of the brokers, who have strategically crucial role in the inter-organizational networks, on the creation and diffusion of knowledge. In addition to this, literature review method is used based on the social network theory of the organizations and some propositions can be tested which indicate that brokers undertake a bridging role in transferring various knowledge and applications that they had gained from different networks in social life. This brokerage function gives them advantage in inter-organizational networks, and causes them to manipulate some knowledge. However, the weak or strong ties within the organizational networks affect the manipulation level of the knowledge in organizational field with different ways. Theoretical framework constructed at the end of this study provides an opportunity to be understood the process of knowledge manipulation by organizational actors and policy makers in any network.

**Keywords:** Knowledge manipulation, organizational networks, brokers
Knowledge Creation and Sharing: Preliminary Findings From a Study of a Regional Innovation Strategy Planning

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Abstract: Knowledge management is conventionally reviewed as a part of an organisation’s activities. Recently the focus has been extended to activities beyond organisational boundaries. (e.g. Nonaka et al. 2000; Gertler & Wolfe 2004; Cappellin 2007). The aim of this article is to describe knowledge sharing and creating as a part of forming an innovation strategy. It explores what types of knowledge was needed, and how and why knowledge was shared and co-created in the regional innovation strategy planning project between actors coming from diverse sectors and network.

Keywords: Knowledge creation, knowledge sharing, collaboration, regional networks, innovation strategy planning

Knowledge Seeking in KM -- Towards an Adapted KM Cycle

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Abstract: Various disciplines have influenced and informed the field of knowledge management (KM) thinking and practices, therefore there are different KM perspectives and practices. Although a lack of consensus exists among these KM perspectives, the differences between them are not really that great: they are all regarding knowledge in organizations as a valuable strategic asset and trying to employ information and communication technology to capture and leverage knowledge to gain competitive advantage for organizations. These mainstream KM perspectives have called forth sharp criticism by some researchers who argue that KM is nonsense and is not different from information management. After reviewing previous KM perspectives and KM models, this paper discusses the key issues concerning knowledge, and the difference between knowledge seeker and knower. Based on the characteristics of knowledge and learning in workplace, the authors introduce a new concept into KM: knowledge seeking, and propose a new KM cycle, arguing that knowledge seeking, as a learning process, is the crucial part in knowledge management. This conceptual paper, providing a new perspective for organizations implementing knowledge management, enhances our understanding and development of KM research and practice.

Keywords: Knowledge construction; knowledge Management; knowledge seeking; learning

Affective Organizational Commitment and Knowledge Donation Behaviour: The Moderating Effect of Perceived Cost of Knowledge Donation

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Abstract: Knowledge sharing is commonly perceived as a single process, but, in fact, it is actually comprised of two processes, namely knowledge donation and knowledge collection. The reason that knowledge donation is made the dependent variable in this study is because it is an intractable problem to encourage individuals to donate a valuable personal resource, and to relinquish such personal asset ownership. In addition, value of knowledge can only be created when knowledge is articulated and shared. Considering
voluntary knowledge donation is an extra-role behaviour, it is hypothesized that affective organizational commitment is a predictor for knowledge donation behaviour. Research has demonstrated that affective organizational commitment relates more strongly to extra-role behaviours than with in-role behaviours. However, a barrier for an individual to engage in knowledge donation behaviour is the perceived cost in donating knowledge, which is the perceived time and effort required. The purpose of this empirical quantitative research is to examine whether an individual’s perceived cost of knowledge donation moderates the relationship between affective organizational commitment and knowledge donation behaviour. Data were obtained from 147 full-time employees from 8 firms in Hong Kong. Hierarchical regression analysis was used in testing the hypothesized moderating effects. It was found that perceived cost of knowledge donation moderates the relationship between affective organizational commitment and knowledge donation behaviour. The result has important implications for both academia and practitioners. For the academia, a reassessment of the role of affective organizational commitment in organizational commitment is required. For the practitioner, it is critical to take into account individual’s perception of the costs of knowledge donation, instead of relying on emotional appeals about the loyalty to an organization. In addition, an employee’s cost perception serves as an important consideration to encourage knowledge donation behaviour.

**Keywords:** Knowledge sharing, affective organization commitment, barrier, cost

**Knowledge Management Success Factors – Proposal of an Empirical Research**

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**Abstract:** It is widely accepted that knowledge management is a critical success factor for enterprises. Not yet known sufficiently are the factors, which influence the success of knowledge management in order to measure the effectiveness of knowledge management. This paper sets out a quantitative study to investigate these factors. Firstly, an overview of empirical work undertaken and the potential success factors is given. After this, the methodology of the study is described. Thereby the basics of structure equation modelling (SEM) are shown. The difference between structure and measurement model is depicted and different validity measures are described. Also two common and possible methods to evaluate a SEM, the co-variance analysis and the variance analysis are displayed. Thirdly a specific model is presented to use SEM in the context of knowledge management success. The model is based on the theory of planned behaviour and is adapted to the context of knowledge management success. Thereby knowledge management success is seen on an individual level, which means that successful knowledge management leads to a satisfying knowledge supply of the organisation member. Finally limitations of the work are provided.

**Keywords:** KM success, critical success factors, structural equation model, PLS, LISREL

**Modelling Procedural Knowledge Creation in Small Manufacturing Firms Through the Identification of key Determinants**

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**Abstract:** This paper presents a study aimed at identifying major determinants of the creation of procedural knowledge in small manufacturing firms. A model of knowledge
creation in which knowledge is a by-product of technical problem-solving is adopted. Particularly, a cognitive-constructionist perspective is assumed, considering organizational knowledge built thanks to a collective effort of people working together during technical problem-solving when managers, engineers and technicians deal with unfamiliar and unexpected situations. From literature and an in-depth multiple case-study analysis of technical problem-solving carried on in 9 small firms, eleven factors - all potentially affecting the generation of new procedural knowledge - were identified. These factors cover contextual, cognitive, and behavioural issues of technical problem-solving. As a second step of the study, data were collected relatively to 91 cases of technical problem-solving occurred in 35 small manufacturing firms in the food-equipment industry, and after generating measurements, the eleven factors were sorted according to the importance of the effect they had on the generation of knowledge performing a hierarchical stepwise regression analysis.

**Keywords:** Procedural knowledge, problem-solving, knowledge creation, small firms, determinants

**Security Awareness: a Knowledge Management Problem**

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**Abstract:** In the modern era where the highly dynamic nature of computer security threats is a constant worry, security awareness is an area of extreme importance to all organisations. Organisations find themselves in a constant battle defending themselves from opponents who not only constantly change their weapons but also constantly shift their battleground. It has been widely recognised that for an organisation to succeed in mounting a successful defence, it must involve all of its members in the battle. The strategies most widely employed to achieve this have centred on developing effective security awareness within the organisation. Unfortunately these strategies have generally proven unsuccessful. Current security awareness approaches largely ignore the need for continuous end-user involvement in both executing security and improving awareness of security issues and protection against ever evolving security threats. Most approaches are not sufficiently flexible to ensure that security awareness evolves at the same rate at which new threats emerge. Since knowledge management recognises as essential the need to continuously involve end-users, security awareness can be seen as a knowledge management problem. This research paper argues that by viewing security awareness as a knowledge management problem and employing lessons learnt from knowledge management, more effective security awareness strategies and tools can be developed. Using the results of a critical analysis of security awareness literature, supported by a survey of experts in the area, compared with the results of a critical literature survey in the area of knowledge management, this paper outlines the parallels between security awareness and knowledge management and identifies appropriate features of knowledge management systems which could be employed to improve security awareness. The results of this research can be used as an initiative to harness knowledge management in improving security awareness within organisations. The results can also be used as a stepping stone for research in the field of knowledge management from a computer security perspective.

**Keywords:** Computer security threats, security awareness, knowledge management and knowledge management systems
A Knowledge Management Case Study in Partnership and Relationship Impact: Towards a First Class Third Sector

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Abstract: This paper presents the findings of a case based study that will explore the initial implementation of the Business Excellence Model (BEM) framework within a not-for-profit Third sector (charitable) organisation called Bournemouth Churches Housing Association (BCHA). BCHA provides accommodation, learning support and social care to their service users across 60 sites throughout the South West of England. The relationship with the academic has forged links with two universities and resulted in a long term partnership involving synergistic mutually beneficial outcomes that have continued long after the conclusion of the initial project. The KTP concentrated on the development and implementation of a performance management system within a third sector organisation to improve organisational effectiveness. The project exceeded all expectations and provided the foundations for a successful alliance continuing long after the completion of the KTP that has generated results that far exceed the original scope and vision. This paper will assess the partnership and relationship impact of a longitudinal research case study that evolved from a Knowledge Transfer Partnership (KTP) started in 2004. Such a case study approach is the preferred method of study for gaining deeper insight (Yin, 1994; Meredith 1998; Saunders et al 2003).

Keywords: Knowledge management, knowledge transfer partnerships, communities of practice, deep smarts, learning cycles

Market Knowledge Transfer and Time Pressure in new Product Development: The Emergent Role of Knowledge Intermediaries in Fashion Industry

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Abstract: Despite the relatively scarce attention received in literature, the time variable, far from having a neutral effect, may greatly affect the management of market knowledge transfer processes, especially in presence of high cognitive distance between exchanging individuals. These are the conditions that usually occur in many new product development contexts. We argue that the firm’s ability to adapt organizational practices to the time specificity of market knowledge processes can play a key role in improving product innovation performance, especially in those industry settings characterised by high demand variability and market knowledge ambiguity. Within an explorative approach, the paper is based on a qualitative research on knowledge transfer processes involved in the product innovation activity in fashion industry. The findings show that the emergence of knowledge intermediaries can support effectively the knowledge transfer processes and improve the new product development performance. A model to conceptualize the different mechanisms used in managing market knowledge flows is outlined. Finally, some theoretical propositions are advanced about the role of knowledge intermediaries in product innovation organizational settings.

Keywords: Knowledge transfer, new product development, cognitive distance, time, knowledge intermediaries
Learning and Development as Cornerstones in Organisational Flexibility

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Abstract: Contemporary organisations are challenged as a result of both knowledge economy and society. Flexibility is strengthened among individual employees and organisations due to both the speed of innovation in products and services as well as due to the complexity of knowledge and work that requires intensive education. Therefore, flexibility improves quality amongst individuals in their multi-faceted areas, namely, intellectual capacity, creativity and adaptability. This strengthens the fact that there is a change of paradigm in the way human capital is viewed. Through the human-oriented perspective, knowledge is seen as collective sense making and social practice. It is in this context of complexity, change and adaptation in an economic and social reality based on knowledge that the objective of this paper is therefore, to reflect upon Knowledge Management in companies such as universities where tacit knowledge is stored as intellectual capital in the minds of both lecturers and students.

Keywords: Knowledge Management, intellectual capital, competencies, flexibility, development

Intellectual Capital Management Accreditation in Portuguese SMEs

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Abstract: The failure of the international economic system has shown that the traditional financial systems do not provide enough information for managers or investors to make strategic and accurate decisions. The intellectual capital management is now seen as an important driver of contemporary organizations and is linked to its innovation capacity. So, the creation of a reliable and accessible method to recognize formally that a company has responsibilities for the management of their intellectual capital, can be very important to ensure a dynamic innovative with sustainability. The propose of this paper is to present the intellectual capital management accreditation methodology –ICMA, applied to medium-sized enterprises (SMEs). This methodology is based on empirical studies, conducted in Portuguese SMEs. According to ICMA methodology, the accreditation consists of a technical process validation and of acknowledgement of the global capacity of the entity to be accredited, converting it, into a member of a recognized group, in which the best practices are predominant; practices that direct the accredited entities on a constant search of alignment through excellence. ICMA methodology is based on Intellectual Capital Model - ICM and its audit parameters. Several researchers have investigated and documented the importance of managing intellectual capital, however, this approach gains importance because it presents an innovative methodology to ensure the management of intellectual capital in SMEs. In terms of practical implication, we can say that the creation of a recognized intellectual capital management accreditation methodology could be an important tool for ensuring the innovation capacity of SMEs and therefore a guarantee for sustainability to the various partners (customers, suppliers, shareholders, government and employees). The following sections of this paper are detailed description of this accreditation methodology, presenting it as recognition of excellence in the management of intellectual capital for SMEs.

Keywords: Intellectual Capital Management, ICMA, accreditation, SMEs
Assessing the Impact of KM on Organisational Practice: Applying the MeCTIP Model to UK Organisations

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Abstract: With the emergence of the knowledge intensive industry, where organisations rely on knowledge of staff for competitive advantage (Lustri et al., 2007), Knowledge Management (KM) has become key for business success (Mu-jung et al., 2007). KM, once seen as a fad (Ramsey, 1996) is now an integral business function (Zhou and Fink, 2003) in both traditional and internet-based businesses (Borges Tiago et al., 2007) to the extent that KM is now viewed essential for profit (Yang, 2008). This paper presents results of empirical research undertaken in early 2009 with 588 UK companies. Research purpose is to assess the impact of the MeCTIP model [Moffett, 2000; Moffett et al., 2000] on UK companies to identify key factors for successful implementation, practice and development of KM. The research employs the ‘Benchmarking KM’ online survey tool. This paper focuses on research methodology and initial survey results using statistical analysis techniques such as descriptives and factor analysis. Avenues for further research are identified.

Keywords: Knowledge Management, MeCTIP model, Factor Analysis

Towards a Practical Guide for Developing Knowledge Management Systems in Small Organizations

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Abstract: There is no common method for developing KMS in organizations; practice is dominated by proprietary and ad hoc approaches and is often oriented towards information systems development. Currently KMS development (KMSD) omits the creation of KM cultures in unique organizational contexts, how to ‘operationalize’ knowledge, and how to support KMS with appropriate technologies. The paper provides practical insights via explanatory elements of a guide for a principled and useful KMSD approach, one which is adaptable for the complex situations of constantly and unpredictably changing environments and specific settings and needs of organizations. The guide’s concepts and approach have emerged from and been validated in practice by an inquiry into a number of problems experienced by particular organizations. For practitioners the paper presents insights into how to develop KMS that address organizational needs. For scholars our guide to a KMSD approach addresses calls in the literature for empirical research into the deployment of KMS and the role of IT in supporting KMS.

Keywords: Knowledge management systems, KMS development, KMSD methodology, KMS architecture, systems development, business improvement, small and medium enterprises, SME
BIWiki – Using a Business Intelligence Wiki to Form a Virtual Community of Practice for Portuguese Master’s Students

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Abstract: Web 2.0 software in general and wikis in particular have been receiving growing attention as they constitute new and powerful tools, capable of supporting information sharing, creation of knowledge and a wide range of collaborative processes and learning activities. This paper introduces briefly some of the new opportunities made possible by Web 2.0 or the social Internet, focusing on those offered by the use of wikis as learning spaces. A wiki allows documents to be created, edited and shared on a group basis; it has a very easy and efficient markup language, using a simple Web browser. One of the most important characteristics of wiki technology is the ease with which pages are created and edited. The facility for wiki content to be edited by its users means that its pages and structure form a dynamic entity, in permanent evolution, where users can insert new ideas, supplement previously existing information and correct errors and typos in a document at any time, up to the agreed final version. This paper explores wikis as a collaborative learning and knowledge-building space and its potential for supporting Virtual Communities of Practice (VCoPs). In the academic years (2007/8 and 2008/9), students of the Business Intelligence module at the Master’s programme of studies on Knowledge Management and Business Intelligence at Instituto Superior de Estatística e Gestão de Informação of the Universidade Nova de Lisboa, Portugal, have been actively involved in the creation of BIWiki – a wiki for Business Intelligence in the Portuguese language. Based on usage patterns and feedback from students participating in this experience, some conclusions are drawn regarding the potential of this technology to support the emergence of VCoPs; some provisional suggestions will be made regarding the use of wikis to support information sharing, knowledge creation and transfer and collaborative learning in Higher Education.

Keywords: Wikis; business intelligence; communities of practice, knowledge creation; knowledge sharing; knowledge transfer management

Methods and Tools of a Web-Based Knowledge Impact and IC Reporting Portal

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Abstract: Knowledge and Intellectual Capital (IC) are key resources and crucial fields of investment in today’s business organisations and the economy. Problems in strategically and effectively using those resources mainly consist in: (i) how to specify, summarize, visualize the current state of knowledge and IC; (ii) how to comfortably provide access to scattered and ill-structured information on the current state of knowledge and IC; (iii) how to define, understand, visualize the impact of knowledge on organizational performance and of IC on the economy; (iv) how to assess and evaluate strategies and activities for purposefully intervening in organizations and economies by means of knowledge and IC. To overcome this, the paper presents methods, functionality and tools forming a web-based infrastructure which provides user-friendly access to information and understanding of knowledge impacts and IC market at company, sector, national and global levels. This
infrastructure basically consists of two sections. The first section enables to immediately benchmark a company’s knowledge management maturity according to specific input data and information, provide tailored feedback and suggest changes in the company’s strategy concerning knowledge-related activities. With this, companies should be motivated to provide their data and support continuous testing, evaluation and improvement of all methods, models, measures and benchmarks following an experimental design. The second section consists of a “World Atlas on Intellectual Capital” comprising world-wide data on the following constituents of the IC market: demand, supply, equilibrium, investment, need, stock, flow, and returns. With this, the web-based knowledge impact and IC reporting portal will support decision makers at company and political levels to purposefully intervene on the attitude towards knowledge and IC through guidelines. Consequently, the paper contributes to research and development to measure and with this to develop a better understanding of the impact of knowledge (management) and IC on the delivery of effective business processes and high value services.

**Keywords:** Knowledge Management maturity, impact analysis, intellectual capital, companies, benchmarking, clustering

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**Value Chain of Information Sharing: Information Seeking and Information Providing**

**Gary Oliver, The University of Sydney, Australia**

**Abstract:** Michael Porter’s competitive advantage value chain provides a proven method for organisations to analyse their operations. The salient features of the competitive advantage value chain are identified as a basis for proposing a value chain for information (or knowledge). The purpose of an information sharing value chain is to enable organisations to assess the information that has value to them, their customers and their suppliers. The sole existing information value chain proposal is evaluated and it is found to be inadequate. The desirable properties of an effective information sharing value chain are discussed. This results in separate information value chains for information seeking and for information providing. The two separate information sharing value chains are then combined. Their use is illustrated with a case study of the information activities of the crew of the Titanic prior to its sinking which reveals some minor limitations. These are discussed in light of the salient features that were identified and the consequences for information sharing. Reason for interest to the conference participants There is only one current article which discussed the information value chain and its support activities contradict the overarching purpose of support activities as defined by Michael Porter (1985/1998). The primary activities are arranged as a kind of cycle and do not provide discrete categories which are applicable to the business rationale for seeking and providing information.

**Keywords:** Information cycle; information sharing, knowledge sharing, value chain

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**Knowledge Acquisition of Routine Design Problems in Industrial Settings**

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**Abstract:** This paper presents a knowledge acquisition method for the identification and formalization of routine design problems at industrial settings. The method aims at supporting the industrial applicability of Computational Synthesis Systems (CSS), which is a technology that allows automating the generation of solutions to design problems.

**Keywords:** Knowledge acquisition, routine design, industrial settings, computational synthesis
Evaluating a Living Model of Knowledge

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Abstract: The definition of knowledge has always been a contentious issue in knowledge management. Effective knowledge management requires a definition of knowledge that is consistent, useful and true. Whilst most definitions today fulfil the first two criteria, none accurately address all three, including the true, biological nature of knowledge. This is where autopoiesis can help. Autopoiesis was developed to try answer the question of what makes something living, using a scientific methodology. It proposes living things are discrete, self-producing entities and constantly cognising entities. Autopoiesis has long inspired definitions of knowledge, with ideas such as: knowledge cannot be transferred, or knowledge can only be created by the potential ‘knower’. Using the theory of autopoiesis, it is possible to create a biologically grounded model of knowledge, representing the latest thinking in neuroscience. However, before this new, biologically grounded model of knowledge can be integrated into new or existing knowledge management theories, it needs to be tested, else it falls into the trap of being conceptual, and remaining that way. This paper starts with the autopoietic, and therefore biologically, grounded model of knowledge, and develops the new evaluation framework necessary to test the model. The evaluation methodology developed in this research started from the field of programme evaluation and was adapted to meet the needs of the knowledge management discipline. This paper subsequently presents the initial findings from the evaluation process and takes the first steps to identifying how knowledge management can improve with its newly found scientific grounding.

Keywords: Autopoiesis, epistemology, evaluation, Knowledge Management, systems theory

Lexical Knowledge Extraction: an Effective Approach to Schema and Ontology Matching

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Abstract: This paper’s aim is to examine what role Lexical Knowledge Extraction plays in data integration as well as ontology engineering. Data integration is the problem of combining data residing at distributed heterogeneous sources, and providing the user with a unified view of these data; a common and important scenario in data integration are structured or semi-structure data sources described by a schema. Ontology engineering is a subfield of knowledge engineering that studies the methodologies for building and maintaining ontologies. Ontology engineering offers a direction towards solving the interoperability problems brought about by semantic obstacles, such as the obstacles related to the definitions of business terms and software classes. In these contexts where users are confronted with heterogeneous information it is crucial the support of matching techniques. Matching techniques aim at finding correspondences between semantically related entities of different schemata/ontologies. Several matching techniques have been proposed in the literature based on different approaches, often derived from other fields, such as text similarity, graph comparison and machine learning. This paper proposes a matching technique based on Lexical Knowledge Extraction: first, an Automatic Lexical Annotation of schemata/ontologies is performed, then lexical relationships are extracted based on such annotations. Lexical Annotation is a piece of information added in a document (book, online record, video, or other data), that refers to a semantic resource.
such as WordNet. Each annotation has the property to own one or more lexical descriptions. Lexical annotation is performed by the Probabilistic Word Sense Disambiguation (PWSD) method that combines several disambiguation algorithms. Our hypothesis is that performing lexical annotation of elements (e.g. classes and properties/attributes) of schemata/ontologies makes the system able to automatically extract the lexical knowledge that is implicit in a schema/ontology and then to derive lexical relationships between the elements of a schema/ontology or among elements of different schemata/ontologies. The effectiveness of the method presented in this paper has been proven within the data integration system MOMIS (Beneventano D. et al., 2003).

**Keywords:** Disambiguation, lexical annotation, probabilistic lexical relationships, ontology engineering, data integration, ontology matching

**Humanistic Knowledge Management Perspective – The Case of Croatia**

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**Abstract:** The paper promotes people-focused, in other words humanistic knowledge management perspective. In the theoretical part of the paper humanistic knowledge management perspective is being elaborated. In the empirical part of the paper the status of knowledge management holders as knowledge management factor is assessed. Precisely, the quality of five areas which are important for knowledge management success (KM infrastructure, KM holders, organizational culture, information technology and measuring KM) was evaluated, in order to position people factor in Croatia. Therefore, Croatian organizations and Croatian employees were asked about their knowledge management practice and their perceptions of its quality.

**Keywords:** Knowledge management perspective, technological perspective, humanistic perspective, knowledge management holders, Croatia

**From Data to Knowledge Objects, Ontological Considerations With Inputs From the Public Health Domain**

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**Abstract:** The notion of knowledge object is central to the modern company due to the increasing awareness of the need of properly managing knowledge. Still, there is no clear idea on how to understand this notion, let alone characterize it. Information technology (IT) is of little help on this issue. It has been focussing almost exclusively toward the regulation of data types, data flows and their management; the complex interaction between information and the human agents, one of the characteristics of knowledge, is unfortunately disregarded. If we aim to develop systems for intellectual capital and knowledge management, we need to study notions like knowledge object, knowledge transfer and knowledge measurement. Here we make a first step in this direction by setting the basis for an analysis of (a class of) knowledge objects with which we highlight some interesting behaviour and dependences. The approach we follow is based on the ontological perspective and is driven by questions like: what is a knowledge object, what composes a knowledge object, how do knowledge objects change? These topics are complex for a variety of reasons and we make some simplifying assumptions by working in a standardized environment where the relationship between data and knowledge is fairly
intuitive. Clearly, the general framework that we want to develop has to do justice of a series of elements (from activities to data, from physical entities to agents' role) that cannot be introduced in a single paper. We limit our presentation to just a few basic notions designed for a generic domain and take advantage of our guiding scenario to show how these can be exploited in specific contexts. The case study is given by the Istituto Zooprofilattico Sperimentale delle Venezie (IZSVE), a veterinary public health institute that conducts laboratory controls and research activities in three main areas: animal health and welfare, food safety, and environmental protection. Ideally, the IZSVE receives samples of material with some accompanying information (date, owner, typology etc.) and decides to run analyses to establish properties of the material or to detect infectious agents. In our theoretical perspective, the IZSVE receives a complex object in the form of a pair (M,D) constituted by a piece of material (M) and relative data (D), and exercises its knowledge with the goal of extracting new data. The process relies in manipulations of M and of D causing a variety of changes in M (from reduction in size to biochemical alteration to complete destruction) while data D evolve. Calling (M',D') the material and relative information we have at the end of an activity, our aim is to understand and describe the relationship between (M,D) and (M',D') in the perspective of organization IZSVE. Thus, we view knowledge objects as triples (M,D,O), where O is an agent, e.g. IZSVE, a department or a technician, and focus on the relationship between the first two components in the perspective of the third.

Keywords: Foundations, knowledge object, ontology, knowledge management, information

Organizational Learning Environment in Software Industry - the Case of Estonian Enterprises

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Abstract: Behavior as learning organization (LO) has a high potential to enhance efficiency of knowledge creation and learning processes in software development (SD) companies. Still, the characteristics of LO environments have modestly studied. Knowledge management (KM) and knowledge transfer are critical competitive success factors in knowledge-based industries, therefore research of the LO environment features in different industries has become the topic of highest urgency. There are several models for knowledge management environments in LO. In this paper we are focusing on Senge's five disciplines and Mets' three-dimensional learning framework models and on their application to Estonian SD companies. The goal of the study is to identify the features of learning organizations in Estonian software development companies. A preliminary empirical study was performed using a questionnaire for mapping organizational learning (OL) environment in SD teams. The factors describing OLE were derived from the collected data using the factor analysis. The 5-factor (according to Senge's five disciplines) and 3-factor (according to Mets' three-dimensional framework) models were analyzed. The comparison of LO features with results of previous studies shows that this environment is more diversified in SD than in other companies and contains software-specific aspects. Collected analytical experience in the study is useful for analysis and organizational development of software companies. An outline of further research is provided.

Keywords: Learning organization, knowledge management, software development management
A Design Option for Optimising Knowledge Worker Expertise in a South African Shared Services Centre

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Abstract: Organisations continue to be structured according to the Industrial Age control model which restricts the optimisation of knowledge worker expertise. Knowledge assets are ingrained in knowledge workers, however, on exit, knowledge assets are lost. Therefore, current organisational design methodologies should place emphasis on the optimisation of knowledge worker expertise. The general aim of the research was to determine whether organisational design can optimise knowledge worker expertise in a South African shared services centre. More specifically the research sought to determine whether organisational design optimises knowledge worker expertise by enabling knowledge workers to share their existing and newly created knowledge through cross-learning with other knowledge workers. The study further sought to determine whether organisational design optimises knowledge worker expertise as the output of the knowledge worker and incorporates it into business processes and routine operations. Qualitative research was conducted with data gathered from six focus group sessions (N=25). Results showed that the organisational design of the shared service centre does not enable knowledge workers to coordinate their activities nor did it allow knowledge workers to expose themselves to knowledge from different perspectives and departments. Results also indicated that the organisational design does not enable knowledge workers to interpret and optimise expertise to innovate and improve performance levels. Therefore the shared service centre’s organisational design may be eroding its competitive advantage by not enabling the optimisation of knowledge worker expertise. Further results indicated that the organisational design at the shared service centre does not make the new knowledge created by knowledge workers available for re-use across the organisation. Consequently, knowledge worker expertise is not harnessed, since the organisational design does not effectively document that expertise to enable other knowledge workers to perform the work activities at a higher performance level. In sum, the research findings have confirmed that the organisational design of the shared services centre does not have the capability to optimise knowledge worker expertise. Valuable insights were provided into the theory of organisational design and which highlighted the need for an organisation design to institutionalise existing and newly created knowledge.

Keywords: Knowledge management; knowledge worker; organisational design; shared services
Strategic Knowledge Active Forgetting: how Organizations can Formulate Strategies to Actively Forget Their Obsolete Knowledge, the Case of Management Consultancy Companies in Iran

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Abstract: Looking at knowledge management (KM) literature from the perspective of KM processes shows that compared with “assessment”, “creation”, “absorption”, “storage and organization”, “sharing”, and “utilization”, there is a gap in terms of considering the role of “knowledge active forgetting (KAF)”. Similarly, the field of organizational learning has been mainly focused on the “accumulation” side of the learning, while “creative destruction” and unlearning has been less tapped. On the other hand, empirical evidences and case studies point to plenty of situations in which learning process fails, at least in part, due to the fact that the old and obsolete knowledge in organizations prohibit firms to absorb, create, or even utilize new knowledge. However, the dominance of external (opportunistic) approaches in the strategy discourse has left little free room for considering about old and obsolete knowledge from the strategic point of view. Although, the resource based approach provides us with an analytical standpoint that paves the way of considering knowledge active forgetting both theoretically and practically, this line of research seems still in its infancy. Throughout a review of the literature of strategy, we showed that the strategic approach toward “KAF”, although not well developed, has some roots in this literature. Issues such as “creative destruction” (Schumpeter, 1934; Aghion and Howitt, 1990; Caballero, 1993; Duguet, 2001; Cantner et al., 2008), “organizational forgetting” (de Holan et al., 2004), “learning to forget” (Hamel and Prahalad, 1994), “avoiding preserving the past” (Hamel and Prahalad, 1994), “strategic inflection points” (Grove, 1997) are some of these issues. As it would be the main contribution of this paper, we want to legitimize the concept of KAF as a strategic issue especially in knowledge based firms, and how overlooking this issue explicitly could negatively affect the implementation of other strategies. Finally, some theoretical questions and practical challenges have been discussed as future research and actions in the field of strategy.

Keywords: Knowledge Management, Knowledge Active Forgetting, strategy, creative destruction, organizational learning

Virtual Community of Practice: a Special Network of Knowledge Creation and Sharing Between Individuals and Groups

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Abstract: Nowadays new technologies represent complex communication channels that strongly support education and training activities inside organizations. Many organizations have used this technology to create spaces of virtual learning in which the geographic distance and face to face communication are no longer barriers to promote learning interactions. The intention of this paper is to analyze the operation of a Virtual Community
of Practice (VCOP) that belongs to a private university that has several campus around Mexico country. The relations that exist along members of the VCOP, the existing strength between their ties in their social network as well as the relations of support (to share knowledge with respect to its processes) that they have, are analyzed in this paper. Given the nature of our research, we define it as an exploratory one. In order to obtain the data of the members of the VCOP a questionnaire divided in three different sections was design and applied to 30 people in charge of the human resources area. Each of these people belongs to one of 30 different campus of the organization that are distributed in five different zones around the country. We use the social networks approach to analyze the data. Our findings show that the relationships, information and knowledge that participants of the VCOP have, depend on their geographic location. We can infer then that a clusterization in the distribution of the information and knowledge exists. In this sense, it is a fact that all members of the network do not participate in a similar way and they do not contribute uniformly with his knowledge. The data reveal that strategic positions exist along the network and that particular members that occupy those positions represent a detonating that promotes participation. A significant difference exists along the participation of network members although this network member’s participation is foster in a similar way. Another important finding that our study shows is the existence of a correlation between the support that a member of the VCOP offers to other members of the community and the people who this member knows. The results indicate strong support for the fact that the greater number of members of the VCOP somebody knows in a face to face relationship, the more support this member will give to them. Finally we propose a preliminary model based on the findings correlations items.

Keywords: Information; knowledge, social networks; community of practice; virtual community of practice; quadratic assignment procedure

Matching Knowledge Needs in the Industry with the Educational Offer: a Strategic Tool for Regional Competitiveness

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Abstract: The purpose of this research was to understand and identify the industrial knowledge needs in the Leiria Region. This study was developed to help the Polytechnic Institute of Leiria to strategically define their knowledge offer to the industrial market needs. The aim was to identify: a) the qualifications required by individuals from top to bottom in the industry; b) the areas of knowledge required and c) the knowledge required by each professional category. Three hundred and forty-nine questionnaires were collected within the building construction, wood and furniture, moulding, and plastic industries. The results showed that the moulding industry identified the highest need for knowledge. With the exception of Plant managers, Plant workers and Apprentices in the wood and furniture industry that chose technical courses, all the other professional categories in the other industries stated continuous training as the qualification needed. The moulding and the plastic industry showed affinities and both identified the same areas of knowledge for middle managers.

Keywords: Knowledge; areas of knowledge, industry, qualifications
People, Technology, Processes and Risk Knowledge Sharing

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Abstract: The present global economic crisis creates doubts about the good use of accumulated experience and knowledge in managing risk in financial services. Typically, risk management practice does not use knowledge management (KM) to improve and to develop new answers to the threats. A key reason is that it is not clear how to break down the “organizational silos” view of risk management (RM) that is commonly taken. As a result, there has been relatively little work on finding the relationships between RM and KM. We have been doing research for the last couple of years on the identification of relationships between these two disciplines. At ECKM 2007 we presented a general review of the literature(s) and some hypotheses for starting research on KM and its relationship to the perceived value of enterprise risk management. This article presents findings based on our preliminary analyses, concentrating on those factors affecting the perceived quality of risk knowledge sharing. These come from a questionnaire survey of RM employees in organisations in the financial services sector, which yielded 121 responses. We have included five explanatory variables for the perceived quality of risk knowledge sharing. These comprised two variables relating to people (organizational capacity for work coordination and perceived quality of communication among groups), one relating to process (perceived quality of risk control) and two related to technology (web channel functionality and RM information system functionality). Our findings so far are that four of these five variables have a significant positive association with the perceived quality of risk knowledge sharing: contrary to expectations, web channel functionality did not have a significant association. Indeed, in some of our exploratory regression studies its coefficient (although not significant) was negative. In stepwise regression, the variable organizational capacity for work coordination accounted for by far the largest part of the variation in the dependent variable perceived quality of risk knowledge sharing. The “people” variables thus appear to have the greatest influence on the perceived quality of risk knowledge sharing, even in a sector that relies heavily on technology and on quantitative approaches to decision making. We have also found similar results with the dependent variable perceived value of Enterprise Risk Management (ERM) implementation.

Keywords: Knowledge Management, Enterprise Risk Management, financial services, information systems, knowledge sharing, Knowledge Management systems

Knowledge Management for IT Project Portfolio

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Abstract: The actual global economical and social instability, coupled with the financial volatility, has further increased the dynamics of the business environment. Remaining in business requires, nowadays and more than ever, aiming at moving targets. Although this situation is, in the authors’ opinion, partly due to the massive introduction of Information and Communication Technologies (ICT), the authors share the belief that an adequate use of Information Systems (IS) can help (i) capitalize and disseminate expertise and ad hoc information – well managed knowledge being a business critical success factor – and (ii) align short term stakes with long term sustainable strategies. With this in mind the authors designed, for one of the global FTSE 100 companies, an IT project portfolio management
(ITPPM) process coupled to a Knowledge Management (KM) system to achieve alignment between corporate business strategy and IT strategy and operations. The identification and evaluation of projects as well as portfolio balancing activities emerged as the most knowledge intensive phases of the ITTPM process. The authors hence focused on knowledge assets related to these phases and on how to address issues regarding the structure, type, physical form, place, time and quality of these assets. This analysis led us to define a KM system to support the matching between business needs and innovations or transformations that are made possible thanks to new technologies. As an adequate management of risks linked to individual project as well as to the portfolio of projects is found critical for value creation, a knowledge base for positive and negative risks at both levels allows for risk mitigation while exploiting potential detected synergies. Finally, an expertise base and a project scheduling module support the optimal resource utilization for the process. The relationships between the knowledge assets and the KM system are considered in terms of knowledge flows. Learning and continuous improvement in the process are made possible thanks to the experience gained and captured at each iteration of the process.

**Keywords:** IT project portfolio, knowledge management system, knowledge application, strategic alignment, project management

**Improving the Decision Making Process in the Design Project by Capitalizing on Company’s Crucial Knowledge**

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**Abstract:** This paper aims at presenting on the one hand the difficulties to capitalize on knowledge which is developed in an innovative product design project, and on the other hand to show the importance of identifying crucial knowledge that should be capitalized. The knowledge created in innovative product design process has some characteristics. First, this knowledge is specific to the innovative product. It is mainly based on tacit knowledge of the project experts gained from previous projects and they do not necessarily apply to the innovative product even if such experience is still important to search new concepts. Second, generally the lifetime of most knowledge used to develop an innovation product is very short because one part of knowledge is not validated in the innovative product project development or because the company’s objectives change rapidly. Thus, it is necessary to justify the need of capitalizing knowledge. In this paper, we propose a Decision Aid Methodology to Identify Crucial Knowledge (DAMICK), in order to justify the need of capitalizing knowledge. This methodology is based on the systemic decision aid model to evaluate Knowledge to be capitalized. In other words, we aim to identify, on the one hand, the explicit and tacit crucial knowledge to be preserved in the organizational memory, and on the other hand the tacit crucial knowledge to be transferred in the action. The DAMICK is composed of three phases. The first phase includes the identification of potential crucial knowledge. The second phase includes the evaluation of potential crucial knowledge based on a preference model. Finally, the third phase consists to identify crucial knowledge.

**Keywords:** Knowledge Management, crucial knowledge, multicriteria decision aid, preference model
An Investigation of the Interplay of Power and Knowledge During the Implementation of Change in the Banking Sector of a Asian Developing Country

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Abstract: The core focus of this study is on the interplay of power and knowledge, which characterises the interaction of stakeholders in the banking industry when implementing a new regulation. The specific context for this research was the investigation of the implementation process of the Basel II regulation across the banking industry of an Asian developing country. The banking industry is faced with a lack of human expertise and inefficient information systems to introduce the radical changes required for the implementation of Basel II. Amid these issues, there is a need to improve communication, coordination and information sharing system among the regulator and the member banks within the country’s financial industry in order to effectively implement the Basel II accord. The study involved semi-structured interviews with fifty eight senior, middle and junior managers across 14 private, government and foreign-owned banks, with additional documentary evidence collected. This paper presents the findings of the first case study, a public sector bank and documents the initial findings regarding issues such as trust, motivation, relationships, power, knowledge and the process of change. These issues are further explored using Foucault’s power/knowledge nexus, as an additional lens to provide insights into the process of change. The impact of these factors on organisational knowledge sharing is also discussed and its resulting effect on the implementation of Basel II. Conclusions of this research are drawn along with implications for future research.

Keywords: Foucault, power, knowledge, trust, motivation, change process

Process Modelling and Knowledge Transfer in Healthcare

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Abstract: In recent years, the need of rationalization has become key-important for the objectives of efficiency and effectiveness within the healthcare services. One way to follow such objectives could be a general reorganization of the hospital supply-chain. Special attention must be paid to drugs and clinical material handling, from the suppliers to the patient, passing through the hospital pharmacy, i.e. all along the supply-chain. However, a parallel flow exists: the flow of information. An effective information management is a necessary point, with or without advanced technological solutions, for achieving the main objectives, and providing better healthcare services. In many cases, each actor that has tasks in a process is only aware of the specific part of the process under his view. In such scenario, the need for processes documentation and knowledge transfer between the various players of the supply chain is a key point for designing service delivery improvements. In this work, proper tools for modelling common healthcare processes are identified, in order to build a useful as-is representation of the main processes, and then suggesting some operational changes. A comparison is presented, among the most common techniques for process modelling, stemmed from industry, and applied to a healthcare scenario. More specifically, the following families of modelling methods have been selected and used: Functional Flowcharts (both activities and information diagrams), IDEF3 (Process Flow and Object State diagrams) and UML (Use Case, Activity and Class
diagrams). The selected case study is a typical hospital pharmacy process. All the presented results are related to existing hospital pharmacies, where the process was first field observed, then modelled by sharing the results with the process players, which are not aware of the full process. Moreover, each player has distinct skills and roles within the organization. For that reason, different techniques have been used to address the various process views and knowledge needs. A qualitative-quantitative evaluation of best suited models is given, with care for the kind of player they are addressed to. For the scope, a number of features are considered: structure, completeness, ease-of-use vs. detail, representation of the process objectives. As a result, there is not one best modelling technique. Feasible integrated uses of the different techniques are instead suggested: for the first analysis to be shared with the process players; for a general view and a better understanding of the process; for identifying and for overcoming critical points. Among the above mentioned modelling techniques, the more detailed is the methodology, the smaller is the portion of the whole process that is reported entirely in the paper, for the sake of brevity.

**Keywords:** Healthcare, process modelling, process documentation, knowledge transfer

### Knowledge-Based Strategies: Case-Study Analysis of Local Computer Service Companies

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**Abstract:** The studies of models for formulating business strategies that explicitly consider knowledge as the core resource are still insufficient. This paper analyses this issue by considering the particular case of computer service firms, which can be seen as Knowledge Intensive Business Services (KIBS) connecting the sources of technological innovation (i.e. large multinationals, research laboratories, universities, etc.) to the individual needs of the local customers. In particular, they operate as mediators between the local cognitive requirements and the more generic knowledge resources available in the global environment. Since the activity of those companies is based on the capability to manage knowledge flows among various actors, the formulation of their business strategies requires new approaches that directly focus on cognitive processes. The paper describes the results of an extensive survey involving the computer service companies located in a specific region (Northeast of Italy). The study allows to draw useful schemes for the identification of knowledge-based strategies, which can be of use beyond the specific context of investigation. In particular, the paper: a) analyses approaches that can be used to establish a knowledge-based business strategy; b) uses such approaches to identify how computer service firms pursue their business strategy by means of a proper management of their knowledge assets; c) discusses the utility of the illustrated approaches, and provides some suggestions for a future research agenda.

**Keywords:** Knowledge-based strategy; KIBS; knowledge mediators; computer services; case study

### Modeling the Transfer of Knowledge Between Organisations: a Critical Review of the Current Literature

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**Abstract:** It is commonly acknowledged that Knowledge Management involves several processes whose main goal is to make the knowledge available where it can be usefully applied. Even though all the KM processes give their specific contribution to the value generation, the literature has always devoted special attention to knowledge transfer since the greatest challenge organisations have to deal with is locating and capturing the
needed piece of knowledge, wherever it is, and transferring it where it is needed. Knowledge transfer is important also because it allows avoiding reinventing an already successfully applied solution. Unfortunately, knowledge transfer is a complex phenomenon and therefore its success is often not easy to achieve. This is particularly true in the case of inter-organisational knowledge transfer, since the actors involved belong to distinct organisations that may be far from one another not only in spatial but especially in cultural and cognitive terms. This is the reason why such issue deserves further attention, from both the empirical and the conceptual side. In light of this, the paper aims to discuss and compare some models of knowledge transfer available in the literature. As a matter of fact, a small number of scholars have dealt with this question; furthermore they have done it from different and often complementary, points of view (e.g. economic, cognitive, social, cultural, and so on) and with different purposes. In particular, the paper has a twofold goal. The first is to critically evaluate the applicability (i.e. basic assumptions, limits, etc.) and workability (i.e. the capability of being put into effective operation) of the examined models. The second is to discuss the possibility of integrating the various models in a single framework that can be a useful working tool both for scholars and practitioners.

**Keywords:** Inter-organisational knowledge transfer; formal models; literature review

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**Knowledge Valuation Management System – Design of a Holistic System for Strategic Knowledge Planning**

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**Abstract:** Knowledge can be identified as one of the fundamental elements of business success. The real challenge of the “Knowledge Age” is the effective handling of this resource within the management cycle. This cycle can be described through planning, realisation, and control. Planning reflects the strategic aspect, the actual realisation is the operative component and control represents the verification of both. The strategic part is especially underdeveloped today. Strategic knowledge planning forms the basis for all further activities. It allows us to verify the attainment of knowledge goals and gives advice for handling the identified results. The aim of this process is a strategic plan with milestones for the operative part of the knowledge management cycle. In our opinion, support is necessary using an information technology system for the elements of the described cycle. A large number of tools can be found for the operative aspect of knowledge planning. Information systems for the strategic part are seldom and mostly just for presentation without any kind of integration into an existing corporate system landscape. One solution to this problem is the “Knowledge Valuation Management” (KVM) Architecture. The architecture supports the process of knowledge planning through the valuation of knowledge. The aim is to verify the attainment of knowledge goals. The architecture is subdivided into four layers (presentation, business, integration, and data) and five modules (interface description, knowledge measurement, knowledge basis, knowledge valuation, and knowledge analysis). With the help of this architecture the mostly unstructured knowledge planning process now has a tool for the continuous verification of the achievement of knowledge goals in order to better handle knowledge as a valuable resource. Our paper describes the support of the complex process of knowledge planning through an information system. This holistic approach based on the achievement of knowledge goals and integrates all supporting activities (methodical as well as technical). The proposed architecture represents a new way for the corporate management to handle this process in a better manner.

**Keywords:** Knowledge valuation, knowledge management, strategic knowledge planning, knowledge management architecture
Analysis-Oriented Decomposition of Design Processes

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Abstract: This paper proposes a method to model routine design processes. The challenge addressed is that expert designers are not focused on design modeling, and design modelers are not familiar to the design process at hand. The modeling activity requires considerable time and effort. A new method is proposed that uses the original design context to derive the model content more efficiently. First, a generic design process is described with specific sub-processes and sets of information. Product development processes are modeled by stacking multiple layers of these design process models. The key concept in each model is the analysis method. The analysis method is used to retrieve the information that describes the design artifact, the application situation and the measures of quality. The way in which the analysis method leads to modeling information is demonstrated for two cases. The proposed standardization of a design process, plus a method to obtain that model, reduces the required modeling effort for new design cases. Design processes that first appear complex are broken down into smaller subsections to the point where an explicit model is made.

Keywords: Knowledge engineering, modeling, decomposition

Structures and Regularities of Knowledge Flows

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Abstract: The systemic view of science leads for example to a subdivision in natural sciences, human sciences and structural sciences. Especially in the field of natural sciences like physics or chemistry there are formal descriptions to assess and calculate the value of these parameters, to describe their structure, and to identify their impact and influence on other objects. This article examines analogous to these natural scientific (physical and chemical) processes the similarities to the knowledge processes, which belong to the human science and have primarily sociological and psychological origins. The basic assumption in this context is the idea of knowledge nodes. Knowledge nodes are individuals or smallest possible combinations of organizational units / individuals. They are turning into knowledge networks based on scientific or business-oriented motivations for cross-linking and increasing their knowledge power. The knowledge nodes consist of knowledge potentials of various knowledge domains. These knowledge potentials can be assessed by their size and by the priority or importance. The knowledge potential existing in the creation phase of the knowledge node will not keep its value along the timeline. There is a kind of half life of knowledge, and the thesis, that knowledge potentials of knowledge nodes reduce or lose their level or value against other knowledge nodes if they do not develop and extend their knowledge. Therefore, every knowledge node tries to open and make accessible new knowledge sources. The development of knowledge takes place on the one hand by the exchange of knowledge within the knowledge node (as far as it consists of more than one individual) and the exploitation of explicit knowledge of external sources. On the other hand, there is the need for compensating and exchanging the knowledge potentials with other knowledge nodes. Thus, knowledge flows occur. This knowledge exchange is characterized by a structure, this means in the IT sense it is a protocol by which the exchange runs. The quantity and kind of exchanged knowledge will be determined by rules and regularities, including filters and restrictions. The structure of these knowledge flows, and the rules under which they run, are very difficult to measure. Thus, it is also not quite trivial to define them. Therefore, it is the aim of this paper, to
develop an approach for defining the structure, rules and restrictions on knowledge flows between knowledge nodes. This model provides a fundamental concept for the further analysis of knowledge networks and the lifecycle of knowledge nodes. It forms an important basis for the understanding and hence for the assessability of knowledge flows and finally knowledge networks.

**Keywords:** Knowledge node; knowledge flow; knowledge flow structure; knowledge energy; knowledge flow matrix

**Monitoring Students Learning Networks Dynamics in Higher Education**

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**Abstract:** This paper describes a model to monitor the evolution of a learning network in higher education settings through the analysis of the value created in terms of intellectual capital, described as human, social and structural capital. The dynamics of the network will be mapped looking at reports elaborated by learners and tutors during the research projects of an International Master’s Program, organised in mobility for a small period of time. An enquiry and action based learning format challenged students to complete e-business projects, where industry and academic testimonials acted as mentors. The residential nature of the course ensured full participation of tutors and learners at all stages of the project. In addition, patterns of networking activity differed between project stages. Methods and tools of Social Network Analysis are applied to understand the network evolution and the emergence of new relationships starting from the initial learning community. Preliminary results indicate that high attainment students developed a larger number of external connections with potential stakeholders in different industries. The more outwardly connected a student was, the higher was his/her final score and the less dense was his/her friendship network.

**Keywords:** Learning networks, Intellectual capital, virtual collaboration, social network analysis, higher education

**A Case Study on Critical Success Factors of Knowledge Management in the Programme Environment Based on Change Management Perspective**

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**Abstract:** There is an increasing recognition that programme management provides a framework to bridge the gap between project delivery and business strategies. Although some evidences have been highlighted programmes’ failure to harness organizational learning, knowledge management in the field of programme is still ignored by most researchers. This study aims to examine critical success factors (CSFs) of knowledge management in “Iran Tax Administration Reform and Automation programme” based on the change management perspective. To achieve the main research goal; a two-phase research strategy is employed in this paper. At first, knowledge derived from an analysis of the knowledge and change management literature is used in order to design the conceptual framework of CSFs of knowledge management in the light of the change management perspective. This framework aims to integrate CSFs of knowledge management with three major dimensions of change management: people, process/structure and culture. Therefore, the phase provides us with a suitable framework for the case study in the next phase. The second phase consists of an explanatory case
study of SCFs of knowledge management in “Iran Tax Administration Reform and Automation Programme.” The case study results highlight that culture is the most critical dimension of knowledge management in programme. Therefore, our study confirms the view that knowledge management is a social rather than a technical process. To the authors’ knowledge, this study is the first attempt to provide a framework for classifying CSFs of knowledge management based on a change management perspective. Also, it seems the paper is the first of its kind which addresses the success factors of knowledge management in the context of programme. It gives valuable guidance to scholars and managers about the kinds of critical factors that should be considered in order to have successful knowledge management in programmes.

**Keywords:** Knowledge management, programme management, critical success factor, change management

**Sauce for the Gander: What can Micro Enterprises Learn From Globals Organisations About Implementing Knowledge Management?**

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**Abstract:** This paper presents the initial findings from Phase 1 of a project being conducted, over the next eighteen months, within the Local Enterprise Agency (LEA) network in Northern Ireland (NI). LEAs are non-profit-taking organisations limited by guarantee. They have a remit to respond to the needs of small and growing businesses by providing a range of appropriate support services. In particular, but not exclusively, LEAs target pre-start, start-up and micro-businesses and assist in building their ability to survive and to achieve sustainability and year-on-year growth. The study is being carried out against a backdrop of deepening economic recession and increasing competition - NI is a small enterprise economy, with only 19% of employment in NI by large firms (250+ employees) compared with 41% in the UK. There are numerous potential changes facing NI LEAs in the short term, including a Review of Public Administration, reducing levels of EU funding and funded programmes; and increasing competitiveness from local Further Education Colleges, all of which are forcing the LEAs to review how they can compete effectively, and achieve long-term sustainability. This project will investigate Knowledge Management (KM) within LEAs and make recommendations as to how they can best employ KM applications and interventions. Phase 1, a pilot study, is currently underway in one LEA, Ballymena Business Centre (BBC). Phase 2 will be conducted across the remaining 26 LEAs. During Phase 1 a range of research methods are being used to investigate issues related to the implementation of KM, including Village Hall Meetings, self assessment questionnaires, structured interviews and focus groups to investigate issues related to the implementation of KM. Key study areas include: Identification of the key business drivers of the LEA and agreement on what knowledge is vital to its business, in order to facilitate the targeting of specific KM interventions Identification of the organisation’s current and desired state of KM preparedness. A Knowledge Audit from which Knowledge Maps can be created and Knowledge Flow Processes can be created. Identification of KM tools and techniques that can be deployed to determine how to create, capture, quality assess and utilise the organisation’s knowledge assets to greatest effect. Securing agreement on the KM initiative implementation plan; establishing a KM Champion rota in-house to ensure universal “buy-in”; devising progress review mechanisms and developing a set of valid and reliable metrics to evaluate the impact of the KM intervention. The overall project aims to realise and maximise each organisation’s knowledge assets by identifying, agreeing and implementing both innovative and well
established KM interventions, which in micro-organisations with micro budgets, have to be inexpensive to establish, resource and maintain. It will also attempt to ascertain how each organisation’s existing IM systems can contribute to the capturing and sharing of its knowledge.

**Keywords:** Knowledge Management, micro-enterprises, knowledge audit

**Knowledge Sharing in Online Social Networks**

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**Abstract:** This paper answered a question – why people want to share knowledge in virtual community setting. Without sharing volition, mass collaboration, often happened on the Internet, becomes non-existent. Mass collaboration has been a significant base for the success of Wikipedia, open source software, Yahoo! Answers, etc. With a model modified from Rational Action Theory (TRA) and data collected in Taiwan, we found that self-esteem and absorptive ability are two driving forces to share. Taiwan posits an important role in knowledge sharing in online social networks. It is an early adopter of knowledge sharing websites including BBS. The success of Yahoo Knowledge+ brought about Yahoo Answers. The latter then has the largest market share of its kind. We did not find expected return has impact. Albeit counterintuitive, this confirms today’s open business environment where unexpected return usually goes to those who have deep involvement.

**Keywords:** Knowledge sharing, rational action theory, virtual community, self-esteem, and social networks.

**Knowledge Services: a Business Framework for Knowledge Management**

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**Abstract:** Government departments are mandated to generate, use, and transfer knowledge within the context of government service priorities. However, there is no common understanding of public- or private-sector knowledge services. This research developed a systems model of knowledge services by eliciting tacit knowledge through dialogue among a group of experienced managers. The model provides a strategic framework for understanding the complex relations between a public-sector knowledge organization and its surrounding socioeconomic environment. It traces the flow of knowledge services from their original generation to their final use in providing benefits for citizens. The model is independent of content, issues, or organizations. It is designed at a departmental level, but is scalable both upwards and downwards. The primary driver is a department’s legal mandate; a secondary driver is the needs of clients and citizens. The model supports either supply or demand approaches to knowledge markets as well as both sequential or transactional markets. There are two levels of resolution - performance measurement, and classifying service-related activities. There are four types of knowledge services: generate content, develop products, provide assistance, and share solutions. Knowledge services are modelled as a circular value chain comprising nine stages that embed, advance, or extract value from knowledge-based products and services. The stages are: generate, transform, manage, use internally, transfer, add value, use professionally, use personally, and evaluate. A service delivery spectrum is segmented into categories of recipients, with associated levels of distribution, interactions, content complexity, and channels. The framework describes knowledge services adequately to
enable understanding, permit measurement, and support management. Other conclusions include: a knowledge services system is far richer than is indicated by provider/user models, a knowledge services system is circular rather than linear in nature, and use of a formal framework within a value-chain context eliminates confusion arising from unclear terminology and imprecise logic.

**Keywords:** Knowledge Management, knowledge organization, knowledge services, value chains, communication

**Knowledge Management and Management of Information**

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**Abstract:** Knowledge management has been an increasing focus for both researchers and practitioners for more than a decade. The discussions generally have viewed the goal of KM as the application of technical and organizational capabilities to improve the processes of creating, storing, retrieving, transferring, and applying knowledge. The work done in the field of informatics focuses on the use of information and telecommunication applications, considering knowledge management aspects. The complexity of knowledge and its requirements to handle it perfectly exceed the possibilities in that sector of informatics at the moment. On the other hand a lot of new technologies have been developed which are succeeding in individual fields of knowledge management. Database systems, applications of artificial intelligence, the principle of the object orientation, data mining and other knowledge tools are some examples of useful implementations in the certain branch of knowledge management. These tools support beside the communication aspects the storage and the distribution of knowledge. This paper addresses an approach of knowledge management and management of information in a large organization. Further, this paper addresses the advantages and disadvantages of some existing systems. Another important aspect is the integrative effect of the new system, which makes it possible to include different resources in one coherent system. In this paper we have seen knowledge from many different points of views. We can say that knowledge is one abstraction level above information and we found out, that discipline knowledge can be subdivided in three different parts, based on informatics, business practice and strategy research. Later on we tried to see knowledge as a resource and found out that it is hard to change established habits of employees to teach them new processes. We have thoroughly discussed the communication of knowledge and the problems and approaches which can be very useful to manage the information flood.

**Keywords:** Knowledge, Management, KM, information

**Communicating for Knowledge Creation: Beyond Content, Towards Meaning**

**Patricia Souto, University of Tampere, Finland**

**Abstract:** Approaches that facilitate the access and communication of knowledge for the knowing practice have been limitedly based on the characteristics of the knowledge needed. These approaches have disregarded the characteristics of the knowing practice in which this knowledge is used and should be useful. Knowledge is needed and used to contribute to the creation of meaning, rather than as an objective 'thing' that has meaning in itself and that can be transmitted detached from the underlying knowing in which its meaningfulness is mobilized and enacted. In the knowing work, this is even more significant, because knowledge workers' needs and uses of knowledge is always related to the meaning they need to create, demanding the communication of knowledge-based inputs to be made attuned to this meaning creation practice. In order to enable the access
Managing Risks of Crowdsourcing Innovation: An Action Research in Progress

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Abstract: Over the last few years, a number of academics and practitioners have emphasized the value of innovation as a main driver for firms to enhance their business performance and sustain a high profitability. Recent studies of innovation have pointed to the growing relevance of external sources of innovation and the firm’s necessity of involving a wide range of internal and external actors and sources to help achieving and sustaining its business strategy. The company can become more innovative by implementing a process of co-creation. It can do this in two ways (1) by internally identifying the business problems and needs for innovation felt by individuals, teams and organizational units (seekers) and furthering the emergence of a community of specialists (within or outside the organization), or employees motivated to provide their knowledge and skills to address innovation problems, increasing their internal visibility and ensuring their empowerment across the company (solvers); (2) by placing its innovation problems and needs to a brokering service that can find the right people to present solutions. These two forms of open innovation is called Crowdsourcing Innovation. Innovation brings risks. Risk of Financial loss or of being unsuccessful. If innovation requires business or organizational change, the risk is even bigger because innovation implies newness and unknown. Any company that innovates must face the inherent risks. Facing the risks requires that the company manages them, understanding in advance their nature and impact, monitoring the relevant indicators to anticipate their occurrence, and being ready to act immediately at the first signs of trouble. The innovating company should consider managing risks as one of its core competences. Without this capability, any innovation project can become an opportunity to dramatically fail the business objectives and sustainability. Steady progress has been made over the last years in understanding open innovation strategy. This paper adds to that effort by focusing a specific form of open innovation – crowdsourcing innovation – and describing an action research in progress to develop a method to identify the risks involved and to manage them in technology-based companies.

Keywords: Open innovation; risk management; crowdsourcing innovation; crowdsourcing
Intercultural Dialogue and KM in Romanian Higher Education. Case Studies at the Bucharest University of Economics and at the “Politehnica” University of Bucharest, the Faculty of Engineering in Foreign Languages

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Abstract: The paper debates topics such as intercultural competences and intercultural dialogue in the context of applying Knowledge Management (KM) in academia. The main research part whose results are being disseminated through this paper is part of a national research project, “Equality of chances and intercultural dialogue”. The project was granted by competition and benefits from the expertise of a dynamic team of University Professors and lecturers as well as enthusiastic PhD students. The paper presents some of the results of our research based on a unique questionnaire shared by students (both Romanian and foreign) studying Economics in foreign languages (at the Faculty of Business Administration taught in foreign languages, English section, the Bucharest University of Economics) and Engineering (at the Faculty of Engineering in Foreign Languages, English section, “Politehnica” University, Bucharest). Both of these faculties have a common characteristic: their students learn all the subjects in foreign languages. We have given a special attention to universities that teach in foreign languages because they are hosting “culturally different” students bringing together people from different nationalities, different cultural backgrounds, with different opinions, characters and personalities. It is necessary to underline the diversity of the subjects involved in our study. In the end we have attempted an overall conclusion drawn from the answers to a unique questionnaire shared by both students in economics and engineering. We consider that the two higher education institutions need to promote a new vision on KM applied in a framework where plurality of cultures cooperates in dialogue and in shared knowledge, skills and responsibility.

Keywords: Knowledge Management, intercultural dialogue, intercultural competence, intercultural sensitivity and effectiveness, cultural diversity

Measuring the Effects of Knowledge Management Practices

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Abstract: Successful managers focus their attention on factors that are critical in establishing and maintaining an organisation’s competitive edge. The knowledge and skill of employees is one of those factors and it requires proactive management attention. Conceptually, this is achieved through Knowledge Management, a term that has existed in the mainstream of business lexicon for quite some time. Despite this, there is the conspicuous absence of a common understanding of the term that frustrates many managers. Studies have clearly established that there are three interdependent and complementary pillars that support the concept of Knowledge Management. These are Organisational Learning Management (OLM), Organisational Knowledge Management (OKM) and Intellectual Capital Management (ICM). OLM, which has so far dominated both
academic and practitioner debate, concerns itself with the problem of capturing, organising and retrieving explicit knowledge, or information, and has led to the simplistic misconception that Knowledge Management only involves the capture, or downloading, of the content of employees’ minds. ICM is dominated by those particularly interested in defining key performance indicators that will measure the impact and the benefits of applying knowledge management practices. If management requires measurement this is an essential task but it can only be undertaken once an organisation has clearly established the strategy-structure-process parameters to ensure it accesses, creates and embeds the knowledge that it needs...the OKM pillar of knowledge management. This paper looks more deeply at this pillar and in particular the lack of a general integrative approach to enhancing organisational performance in this key strategic area. It considers to what extent such an approach may help an organisation more effectively manage its most relevant source of competitive advantage. With a greater awareness of the various factors allied to the managing and leveraging of human oriented and system oriented knowledge assets, some proposals are put forward to assist in developing or redefining an organisation’s intellectual capital reporting models in search of a planning, control and performance measurement system that accounts for the management of an organisation's intellectual assets.

**Keywords:** Organisational learning management, organisational Knowledge Management, intellectual capital management, performance indicators, competitive advantage

### Role and Practical Solutions of Knowledge Management in the Hungarian Pharmaceutical Industrial Cluster

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**Abstract:** In period of recession everyone thinks twice for what to spend on. It applies to households and companies as well. Indicated by the conformation of stock exchanges dynamic decline of purchases and business investments affect the whole economy. However, monitoring the alteration of security markets we can conclude that companies with a profile of pharmaceutics perform remarkably better even under recession times. So most likely economic crisis won’t shatter the position of the Hungarian pharmaceutical companies. It is not an aim of this study to deal with capital market evaluation of knowledge-based organizations; nevertheless, we build upon the fact which has been proven several times before, that market (numerically) appreciates the knowledge management strategy and intellectual capital of these firms. Our empirical research tries to reveal how much knowledge management contributes to the stability and success of pharmaceutical companies; whether such profession- and industry-specific knowledge management applications exist which enhance chances of other industries to survive; to which extent applied knowledge management, knowledge sharing and transferring techniques can be adopted in each countries; how much domestic circumstances, economic, social and legal frames modify the international knowledge management practice of multinational pharmaceutical corporations. Throughout our survey we conducted questionnaires and interviews to reveal the knowledge management practices and characteristics of the Hungarian pharmaceutical cluster in details. We analyzed and compared the 'knowledge management best practices’ of industrial actors. In our opinion it considerably contributes to the fact that pharmaceutical industry could be one of the ‘real survivor’ of recession.

**Keywords:** Knowledge sharing, knowledge preservation, integrated knowledge management systems, pharmaceutical industry
Mining e-Mail to Leverage Knowledge Networks in Organizations

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Abstract: There is nothing new about the notion that in today's knowledge driven economy, knowledge is the key strategic asset for competitive advantage in an organization. Also, we have learned that knowledge is residing in the organization's informal network. Hence, to leverage business performance from a knowledge management perspective, focus should be on the informal network. A means to analyze and develop the informal network is by applying Social Network Analysis (SNA). By capturing network data in an organization, bottlenecks in knowledge processes can be identified and managed. But where network data can easily be captured by means of a survey in small organizations, in larger organizations this process is too complex and time-intensive. Mining e-mail data is more and more regarded as a suitable alternative as it automates the data capturing process and enables longitudinal research possibilities. An increasing amount of tools for mining e-mail data into social networks is available, but the question remains to what extent these tools are also capable of conducting knowledge network analysis: the analysis of networks from a knowledge perspective. It is argued that in order to perform knowledge network analysis, a tool is required that is capable of analyzing both the header data and the body data of e-mail messages. In this paper two e-mail mining tools are elaborated. One focuses on the analysis of e-mail header data and the other focuses on the analysis of e-mail body data. Both tools are embedded in their theoretical background and compared to other e-mail mining tools that address e-mail header data or e-mail body data. The aim of this paper is two-fold. The paper primarily aims at providing a detailed discussion of both tools. Continuing, from the in-depth review, the integration of both tools is proposed, concluding towards a single new tool that is capable of analyzing both e-mail header and body data. It is argued how this new tool nurtures the application of knowledge network analysis.

Keywords: e-Mail mining, Knowledge Management, knowledge networks, social network analysis

Languages and Knowledge Versus Modeling and Processing

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Abstract: Today, the specialists working in a certain field, face different complex problems, many of these requiring the use of computer and software products. The complexity of activities, competitions of all kinds, efficiency requires the use of the best software and hardware products. The explosion of tools and methods offered by information and communication technologies can be easily seen, by computing systems, by peripherical equipments with different functions. There are more and more research, development and innovation programs and results do not delay to appear. At the same time, continuous learning, the use of new knowledge in the activity field must be major goals of every specialist. The real environments of nature are governed by languages. Integration, adaptation and human activity within various environments of nature depend
on the degree of knowledge and usage of the languages of these environments. The creation and current usage of computers in life and activity has in fact proven the unlimited creative capacity of mankind. This was possible by reconsidering and by using the concept of languages not only for communication but mainly for knowledge. The latter represents a major requirement of mankind ever since the stage of survival within nature has been deposed. The multitude and complexity of languages show in fact that these efforts, experiments and researches are made in order to process information and knowledge for mankind’s well being. The present paper systematically deals with the role of languages in the process of gaining knowledge and offers justification in the spirit of the above-mentioned ideas and comments. It presents a systemic approach on problem solving using demonstrative method and algorithm method. It reveals that the sciences are virtual representations of knowledge. Finally, make a general definition for a language of knowledge.

**Keywords:** Knowledge, languages, modeling, processing, demonstrative method, algorithmic thinking

The Impact of Unique Characteristics of Projects and Project-Based Organisations on Knowledge Transfer

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**Abstract:** Knowledge has been recognised as an important organisational asset that increases in value when shared; the opposite to other organisational assets which decrease in value during their exploitation. Effective knowledge transfer in organisations helps to achieve and maintain competitive advantage and ultimately organisational success. So far, the research on knowledge transfer has focused on traditional (functional) organisations. Only recently has attention been directed towards knowledge transfer in projects. Existing research on project learning has recognised the need for knowledge transfer within and across projects in project-based organisations (PBOs). Most projects can provide valuable new knowledge from unexpected actions, approaches or problems experienced during the project phases. The aim of this paper is to demonstrate the impact of unique projects characteristics on knowledge transfer in PBO. This is accomplished through review of the literature and a series of interviews with senior project practitioners. The interviews complement the findings from the literature. Knowledge transfer in projects occurs by social communication and transfer of lessons learned where project management offices (PMOs) and project managers play significant roles in enhancing knowledge transfer and communication within the PBO and across projects. They act as connectors between projects and the PBO ‘hub’. Moreover, some project management processes naturally facilitate knowledge transfer across projects. On the other hand, PBOs face communication challenges due to unique and temporary characteristics of projects. The distance between projects and the lack or weakness of formal links across projects, create communication problems that impede knowledge transfer across projects. The main contribution of this paper is to demonstrate that both social communication and explicit informational channels play important role in inter-project knowledge transfer. Interviews also revealed the important role organisational culture play in knowledge transfer in PBOs.

**Keywords:** Knowledge transfer, lessons learned, organisational culture, project management office (PMO), project-based organisation (PBO), social communication
Factors Affecting the Willingness of Multinational Corporation’s to Share Knowledge with Universities: a Case Study of the Automotive Industry in Thailand

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Abstract: Knowledge Management is a new inter-disciplinary strategy in today’s business world. It is well recognized that knowledge is an important asset for organizations. Making the most value from employees’ knowledge is an important element of a resource-based strategy for firms. In addition, firms create and acquire new knowledge in many ways such as in-house or outsource R&D. Knowledge sharing between firms and Universities has been always considered as a challenging task. This statement is even more valid for emerging or developing countries such as Thailand. Multinational corporations can play a significant role in knowledge, technology diffusion and development of potential R&D within South East Asia. The growing number of multinational corporations’ R&D activities is happening only in select developing countries. The Thai government is aiming to develop policy in order to foster and attract R&D based Foreign Direct Investment (FDI). One way, is to strengthen the Universities-Industries (UI) relationship and to foster knowledge flow. The success and failure of the University-Industry linkage has been widely discussed, but there is still a need to understand the dimensions impacting the willingness of multinational corporations to share knowledge with Thai Universities. This study investigates the relation of factors (industrial characteristics, firm characteristics and business models) that can play a substantial role in the knowledge sharing mechanism. Furthermore, the study brings a significant contribution to the triple helix model research area, especially for developing countries.

Keywords: Knowledge sharing, triple helix, Information communication technology, culture, empirical knowledge sharing investigation

Increasing Awareness to Disasters by Knowledge Management with Intelligent Agents

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Abstract: The evaluation of natural disaster risk is an intensely studied matter worldwide. The present paper intends to describe a solution to ensure the obtaining of a functional system for risk management of natural disasters in an adequate period of time. Its goal is to develop a semi-automated process for the harmonization of the filed names of the databases involved. Software agents are used to extract the needed information from the existing databases that belong to different levels of decision, from local to governmental organisations, as well as independent experts. The resulting standardised ontology helps the users to make complex queries over the distributed databases. Intelligent agents can extract knowledge to support local or governmental decisions in better handling the consequences of disasters by making simulations about their future impact on communities.

Keywords: Risk management, knowledge management, intelligent agents, ontology, natural disasters
Research in Progress Papers

A Conceptual Framework for the Application of Qfd to Optimize Knowledge Management in the Field of Romanian Military Education

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Abstract: The traditions of Romanian education and implementation of the European programs in training require that academic institutions reconsider and adjust their educational offerings taking into account the new demands on the labour market of a knowledge-based society. At the human resource level, the Romanian military command recognizes the important role of intellectual capital in the modern military enterprise. The present research-paper performs a critical analysis of the current Land Forces Academy (LFA) Knowledge Management (KM) and suggests possible means to improve it. Using statistical procedures as T-tests and analysis of variance (ANOVA) we measure the main differences of military officer's perceptions of the KM circle: creation, processes, and applications of Knowledge in relation with individual characteristics and technology. By using Quality Function Deployment (QFD) we can define the qualities of a KM system that is in conformity with customer expectations and then transpose these qualities into set-objectives. In this respect we submitted questionnaires, gathered information through direct observations, interviews, focus-groups and field work focused on three fundamental elements: society needs, modern battlefield requirements and academic community needs. Interpreting the academic quality, the Essential Learning Standards and the post-compulsory frameworks we created a management system that has a clear focus on what is to be learnt, how learning will occur and how it will be assessed. Consideration is given to Critical Success Factors (CSF), constrains induced by the military environment and resources that take into account the diversity of students. The research sets the context as a reaction to beneficiary requirement changes in order to develop new modules and functionalities for the already existing Knowledge Management System (KMS), or to design, create and implement a new KMS.

Keywords: Military profession, Knowledge Management, quality function deployment, learning organization, information and communication technology, statistical procedures

The Challenge of Knowledge Management in SMEs: Findings from an Empirical Study

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Abstract: Knowledge Management (KM) is a critical area for small business managers in the today competitive environment. However, there is a general consensus in relation to the fact that the benefits of KM have not been fully exploited by small firms. In fact, although the wide literature on KM, there is an abundance of research describing how large companies are successfully practising KM, but little contributions on the critical success factors for KM adoption in SMEs. Indeed, empirical studies have been rarely
conducted on this topic. The main aim of this paper is to shed light on the KM practices in small firms. To this purpose, the paper presents the preliminary results of an empirical investigation carried out in a cluster of 25 high-technology SMEs located in the eastern area of Naples City (Italy). The methodology adopted is based on the following two main stages: a) a literature review on knowledge management and its usage in small business has been carried out; b) a semi-structured questionnaire has been setting up and validated in a number of focus group discussions. The questionnaire survey has been conducted through interviews with managers of small firms belonging to the cluster investigated. Survey findings highlight the following points: - the surveyed companies show significant KM needs, but they adopt mainly internal KMSs that involve relatively simple ICT tools; - knowledge exchanged is mainly tacit and it requires KM tools based on personal relationships and interactions such as work teams; - ENS firms express the need for both internal and external KMSs enabling the collaboration relationships with other firms for developing common projects; - there are some relevant factors motivating the adoption of internal and external KMSs in firms investigated (such as innovation, operational management and market features) but also significant barriers (such as the protection of intellectual capital and cultural barriers).

**Keywords:** Knowledge Management practices, small and medium sized enterprises, high-technology sectors, empirical survey

**Collaborative Knowledge Management, as an Accelerator of Entrepreneurship**

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**Abstract:** Nowadays, Entrepreneurship –as an important mean of making value and wealth for societies and organizations– is in center of attention. Entrepreneurship as a way of thinking, reasoning and acting that is opportunity obsessed, has a very strong dependency on the opportunities that are recognized, discovered or created by the entrepreneurs. There are a lot of knowledge-related elements those can be used by individuals to increase their potential to be an entrepreneur in a society or an organization. Knowledge management systems are very strong tools to make parts of tacit knowledge to learnable contents that can be guided to be used to empower individuals to be entrepreneurs. By using collaborative, conversational knowledge management we can manage the learning process of individuals. It conduct them to have a good intuition in – both context of justification and discovery– their specific domains to be better experts and to have more effective, accurate and up-to-date –both qualitative and quantitative– initial and prior knowledge to make entrepreneurial decisions under different levels of uncertainty. This access to information also helps individuals to have a good entrepreneurial alertness to recognize, discover and create opportunities. Using collaborative, conversational knowledge management systems enables us to do knowledge acquisition more effectively and to make stored knowledge more up-to-date and accurate. These features of these kinds of systems make them a good tool to be used in amplifying of entrepreneurial behavior elements like intuition, alertness, expertise and etc. which will define the cognition of entrepreneurs that will be the basis of their inferences, decisions and their behavior as a whole. In the current research, getting together findings of both fields of knowledge management (KM) and entrepreneurship, we will explain how KM and specifically collaborative and conversational KM can be used as a tool to empower individuals with more potential ability to be an entrepreneur. To do this we will discuss entrepreneurship and then by defining some of elements that can be influenced by collaborative KM, we will enter to the domain of KM. After introducing these
Keywords: Collaborative knowledge management, entrepreneurship, opportunity

Project Team’s Internal and External Social Networks and Their Influence on Project Performance
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Abstract: The research on project learning has recognised the significance of knowledge transfer in project based organisations (PBOs). Effective knowledge transfer across projects avoids reinventions, enhances knowledge creation and saves lots of time that is crucial in project environment. In order to facilitate knowledge transfer, many PBOs have invested lots of financial and human resources to implement IT-based knowledge repository. However, some empirical studies found that employees would rather turn for knowledge to colleagues despite their ready access to IT-based knowledge repository. Therefore, it is apparent that social networks play a pivotal role in the knowledge transfer across projects. Some scholars attempt to explore the effect of network structure on knowledge transfer and performance, however, focused only on egocentric networks and the groups’ internal social networks. It has been found that the project’s external social network is also critical, in that the team members can not handle critical situations and accomplish the projects on time without the assistance and knowledge from external sources. To date, the influence of the structure of a project team’s internal and external social networks on project performance, and the interrelation between both networks are barely known. In order to obtain such knowledge, this paper explores the interrelation between the structure of a project team’s internal and external social networks, and their effect on the project team’s performance. Data is gathered through survey questionnaire distributed online to respondents. Collected data is analysed applying social network analysis (SNA) tools and SPSS. The theoretical contribution of this paper is the knowledge of the interrelation between the structure of a project team’s internal and external social networks and their influence on the project team’s performance. The practical contribution lies in the guideline to be proposed for constructing the structure of project team’s internal and external social networks.
Keywords: Knowledge transfer, project team, internal social network, external social network, performance

A Framework for Assessing Commensurability of Semantic Web Ontologies
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Abstract: The Semantic Web proposes a framework for establishing a “web of data”, analogous to the “web of documents” of the World Wide Web. It envisions a series of interconnected ontologies, underwritten by formal languages such as OWL and RDF. The problem of co-ordinating disparate ontologies has lead to the development of various ontology matching approaches. However, as these approaches are algorithmic they cannot make use of background or tacit information about the ontologies they examine - information only available in the broader social context in which ontologies are created and used. In many practical knowledge management scenarios, such information is vital in understanding the costs, feasibility and scope of ontology alignment projects. Prior to
undertaking the detailed task of concept-to-concept mapping between two ontologies, it is therefore useful to ask: are these ontologies broadly commensurable? This paper presents a framework for describing and comparing cultural information about ontologies, developed as part of a joint project conducted by RMIT University and FujiXerox Australia, “Towards the ‘Semantic Web’: Standards and Interoperability across Document Management and Publishing Supply Chains”. The framework is intended for practitioners to use as a tool to arrive at better estimates and assessments of the scope of work required to develop an adequate translation between two or more ontologies. The framework has been piloted as an online software toolkit, which is presented to a small group of participants. After using the software, participants complete an evaluation, which elicits quantitative and qualitative feedback on both the framework and the software. The paper presents the results of the pilot testing process, along with some considerations of how the framework might be further improved.

**Keywords:** Ontology matching, commensurability, knowledge-producing cultures

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**Knowledge Management Within the University Technology Transfer Process**

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**Abstract:** The last two decades has seen increased interest in the universities role in the economy. Traditionally universities' primary mission was to engage in teaching, research and disseminate knowledge across both academic and student communities (O’Shea et al., 2005). They also provided highly educated and qualified personnel to industry. However more recently there has been a focus on transferring and commercialising knowledge within universities. Increasingly universities are being recognised as an important source of new knowledge especially in the areas of science and technology (Sharma et al, 2006). This has led to increased interest on technology transfer (TT) from universities to industry as an economic development strategy (Etzkowitz, 2003; Fritsch and Slavtchev, 2007). The aim of this study is to identify the key knowledge management (KM) activities that exist within the TT process of a single University case study to identify areas which could be improved resulting in an increased number of patents and spin off companies. This paper will begin by identifying the University technology transfer (UTT) stages followed by a discussion of KM through an absorptive capacity (AC) lens.

**Keywords:** Knowledge Management, absorptive capacity, technology transfer

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**Practitioner Papers**

**The Challenge of Breeding a Knowledge Sharing Culture**

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**Abstract:** The elusive knowledge culture that most businesses profess they have in-house, is still above and beyond the reach of many companies. This is because most businesses don’t know how to achieve this. How do they do this? Do they throw money at the technology side? Hoping the best platform will be an instant fix. Do they send out memos informing all they have to use the intranet? Or else! Indeed many even wonder what they are even trying to achieve by foisting a knowledge culture within their business. If they are doubtful of the benefits themselves they have little or no chance of promoting the change in the organisation. Another key question asked is how are the benefits of
knowledge sharing measured? As with many problems in the business world they are never simple solutions. These conclusions are based on 10 years of building intranets and knowledge cultures. Most companies do not start from scratch when the decision is made to promote knowledge sharing. They are already knowledge sharing in one form or another even if it’s just verbal conversations and emails. These conversations or knowledge bytes normally only contain a small number of participants. The challenge is how to broaden the knowledge audience and assess the value of doing so. The starting point should be to employ a knowledge manager and then work outwards to form the business’s particular brand of knowledge system. A good knowledge manager will also be an information architect who will know how to construct libraries of knowledge and consolidate islands of information into useable forms of knowledge. That’s the starting point take a deep breath... the rest is all uphill. This paper seeks to describe the most important strategies that business can employ to encourage the seeds of a knowledge sharing environment. It will also describe some of the tangible and measurable benefits which so often companies need in order to keep investing in a knowledge sharing culture. 

Keywords: Knowledge culture, information architecture, measuring success

Assuring Competence at Enterprise Level

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Abstract: In an earlier paper, we developed a critique of the conventional wisdom about competence and developed and offered a systematic and systemic framework for understanding, development, assessment, management and progression of competence as a human focused quality (Hessami & Moore, 2007). This paper develops the general systems framework further to explore the essential attributes of competence at the level of a whole enterprise comprising a blend of processes, procedures/rules, people and physical/virtual resources. We illustrate a case study demonstrating how to pragmatically apply the framework in the course of assisting with the identification, evaluation, benchmarking, assessment, development and assurance of competence at a composite level within an enterprise.

Keywords: Competence assessment, competence management, competence benchmarking, individual competence, team competence, enterprise competence

Development of a Competence Management Ontology for IT Companies

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Abstract: The paper presents a generic framework of an intelligent information system for competence management based on ontologies for information technology companies. Our research question is whether it is possible to build such a theoretical framework. In a first step it will be applied in an information technology (IT) small enterprise and then its applicability will be verified to other organizations of the same type. The work presented in
the paper is performed under the project “CONTO–Ontology-based Competencies Management in Information technology” funded by the Romanian Ministry of Education and Research, involving technical, economics universities, a research institute and an IT private company. A competence management system (CMS), in our vision has to achieve three functions: (a) to support the complete and systematic acquisition of knowledge about the competence of the members of an enterprise; (b) to provide the knowledge about competences and their owners; (c) to apply the available knowledge to serve a purpose. The core of the competence management information system is an ontology that plays the role of the declarative knowledge repository containing the basic concepts (such as: company-job, competence, domain, group, person, etc.) and their relationships with other concepts, instances and properties. The Protégé environment was used for the development of this ontology. The structure of the ontology is conceived so that description logics can be used to represent the concept definitions of the application domain in a structured and formally well-understood way. Knowledge acquisition (KA) is performed in our approach by enriching the ontology, according to the requirements of the IT company. An advantage of using an ontology-based system is the possibility of the identification of new relations among concepts based on inferences starting from the existing knowledge. The inferences may be performed in our approach by a reasoning engine, using classifiers in the Descriptions Logics tab associated with the Protégé ontology environment. The user can choose to query instances of one type of concept, based on the relations that are displayed for him/her in a dropping menu. In addition to choosing relations modeled in the ontology, the user may also query inferred relations that are not explicitly stored in the knowledge base. The second type of search is browsing the ontology. The ontology skeleton is seen as a tree and its nodes are hyperlinks referring to other concepts or to instances. Starting from the main concepts, the user can get particular information about any instance of any other concept. The paper also presents some use-cases. One use scenario is the determination of needed competence for a job of one person, whose curriculum vitae is present as description. Other scenario is the identification of competencies that are not covered by the existing personnel in a company. Another possibility of use of our competence management information system is to link this ontology to another competence management ontology for project management and to deduce the optimal for teams building, as minimum of gap in educational needs.

**Keywords:** competencies, ontology, management, information technology

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**Knowledge Management in a Chief Knowledge Officers' Community of Practice "If the flame has fallen among the cedars, what can the wall-hyssop say!"**

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**Abstract:** Applying knowledge management has been examined and researched within organizational systems where Chief Knowledge Officers (CKO) lead these processes. There is a significant lack in the professional literature in Israel and the world regarding the application of knowledge management processes within a community of knowledge managers (CKO's CoP). The issue of whether or not processes of knowledge management exist among the community of leading professionals in the KM field, and the quality of these processes, is important for gaining insight both in the practice of knowledge management as well as for researchers in the field. An analysis of a case study of the Forum of Knowledge Management in Israeli Organizations attempts to examine these questions; to define and clarify the existing situation and to propose additional directions of exploration in research and application.
Knowledge Sharing Implementation Among Malaysian Undergraduate Students

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Abstract: This paper is a part of an on-going research to study how knowledge and information sharing is implemented among Malaysian undergraduate communities. Every university has their own way in delivering knowledge and information to their undergraduates but occasionally, there would still be incomplete or hidden information. A question to be is; How far can the knowledge be delivered to the undergraduates? This research is based on the assumption that undergraduates must realise the critical importance of knowledge and information searching skills. The aim of this research is to investigate the critical success factors for effective knowledge sharing among Malaysian undergraduate students. The main objective for this research is to identify the type of knowledge shared among Malaysian undergraduates. On that basis, this paper will discuss the findings from a pre-pilot study, investigating how Malaysian undergraduates in Manchester are using web 2.0 applications for knowledge sharing implementation in their daily lives as students. As web 2.0 applications are not compulsory for every single individual in the community, the implementation of those applications may yield unexpected results in the student community. In order to provide a sound basis for the pre-pilot study, online document archival through a search engine has been conducted before the main study. The purpose of this exercise was to prepare the researcher in exploring the background of the community; and to see if the undergraduates are utilizing web 2.0 applications. The pre-pilot study had also identified challenges and difficulties in handling the community members if knowledge sharing had not been implemented. A Semi-structured interview approach was implemented to identify the types of knowledge shared among Malaysian undergraduates. The researcher had also used the same approach in identifying how Malaysian students shared knowledge among their community, during their study abroad. The target interviewees were from student leaders in a student community representing Malaysian undergraduate students in Manchester. This study used exploratory and descriptive research techniques for instrument preparation and analysing the findings. The interview scripts were transcribed manually using a digital wave player by the researcher. The same procedure will be applied for Sydney and Kuala Lumpur case studies. The findings from this study will be used in preparing the questionnaire instrument for the following stages in this research. The questionnaire survey will be implemented through online distribution for the student community in the three different cities as mentioned. In terms of expected contributions from this research, it is expected that Web 2.0 applications may provide better leverage in knowledge sharing and creating many potential or possibilities for Malaysian undergraduates living in different locations.

Keywords: Knowledge sharing, Web 2.0, knowledge, community, Malaysian undergraduate students